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Residence in Burlingame, California, Clarence W. W. Mayhew, Architect • *Roger Sturtevant Photo*

ARCHITECTURAL RECORD

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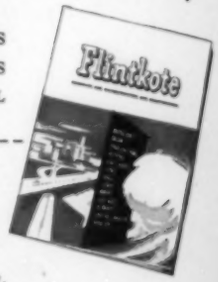

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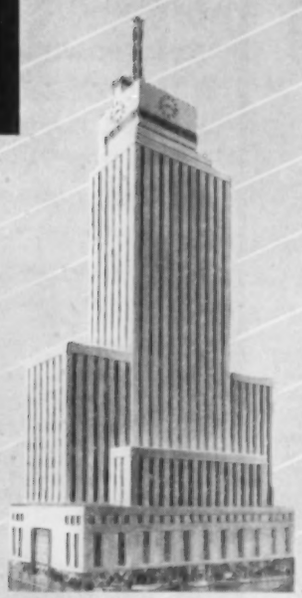

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THE RECORD REPORTS

FWA Argues For Renewal of Advance Planning Program; Segments of Building Industry Urge Modular Housing; VA Cutback Scrutinized

Receding price and cost levels bolster the Federal Works Agency argument for renewal of the advance planning program. This is the scheme whereby the federal government loans interest-free money to states and local communities to finance preparation of plans and specifications for all sorts of public works projects except housing.

When the program was booming under the administration of the Bureau of Community Facilities before its expiration on June 30, 1947, architects and engineers were called upon to do the advance planning for projects estimated to cost billions of dollars. Despite the urgings of the FWA, Congress let the program die out in midsummer of 1947, and while repeated attempts have been made to renew the Washington fountainhead of loaned planning funds, Congress could not be persuaded to act.

The long-standing argument put forward by proponents of the plan basically is founded on the conviction that this country needs a large backlog of construction projects planned and ready to go in event of increasing unemployment — projects of the public works type which involve fairly large-scale operations and would require many workers.

When building was booming along at its postwar peak, this proposition found a cool reception in high places. Those called upon to put the advance planning program back to work to build up a substantial shelf of ready-to-go construction asked why — why — why reinstate this Bureau of Community Facilities operation when the prospects of economic recession appear to be so remote, why tie up government funds (when they wouldn't bear interest) just in anticipation of a will-o'-the-wisp?

Picture Has Changed Now

The changing economic picture today, however, lends greater credence to the "pro" arguments merely by virtue of focusing more attention upon them. The needs for public works construction are no less now than they were last fall; in fact, they have increased and this is not denied.

FWA Administrator Philip B. Fleming has brought the advance planning question to the fore once again with this recent statement which is now viewed in a new light: "If private construction should falter in the months ahead, we are in no position to bridge the gap by expanding our program of state and local public works. The projects are not ready." It is felt in Washington that Gen. Fleming, if anyone, should be able to appraise the situation accurately. He has been in government (and near the top level) long enough to observe needs balanced against trends in the changing national conditions and is not considered an alarmist.

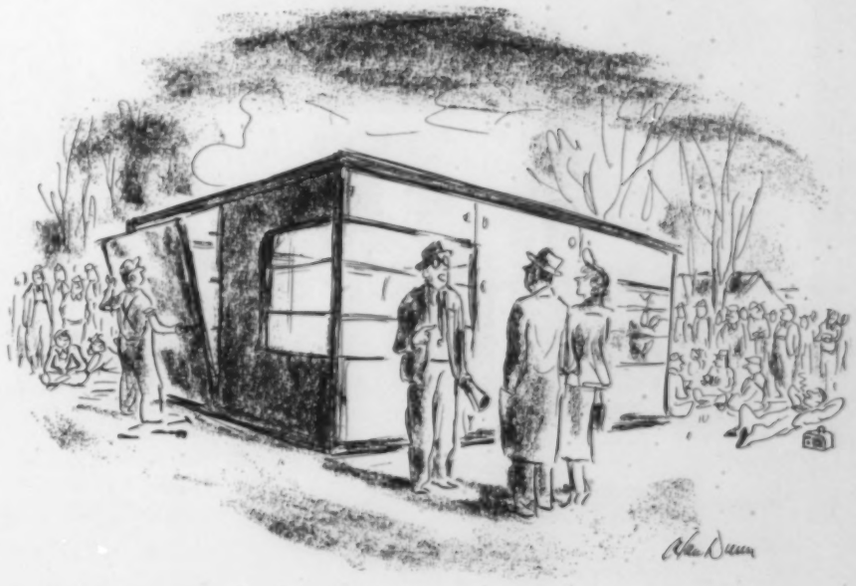
Just how much of a shelf of these planned public works is there at present? What quantity of design work has been completed placing projects in a position to go forward when those responsible believe the time has come for dusting off the plans? Answers to these questions cannot be too definite. The only known factor is the number of jobs prepared under the new defunct program and the number of these still in the "plans prepared" stage. Unknown is the volume of works blueprinted locally without federal assistance and shelved.

FWA's Office of Economic Research, carefully pointing out that no new advances have been made by the Bureau for planning purposes since June 30, 1947, says that 6969 projects with an estimated construction cost of $2.5 billion consumed $55.7 million in planning advances. That is not the picture today, however. As of December 31, 1948 (latest date for which figures were given), plans for 4876 projects with an estimated total cost of $1.5 billion had been completed. This involved advance planning funds of $27.7 million. But for a true analysis of the situation at the turn of the year repayments on started projects must be considered. These repayments have amounted to $5.5 million of planning funds for blueprinted construction on which work estimated to cost $337 million has been begun.

Significantly, the governments at lower levels had applied for planning money to cover 2272 additional projects when the program expired. Cost of this work was said to approximate $1 billion and would have involved planning money in the amount of $31.5 million. But these applications had to be "deferred" when the stop light was put on the BCF program by Congress.

In the construction category alone, exclusive of land and right-of-way,

(*Continued on page 12*)



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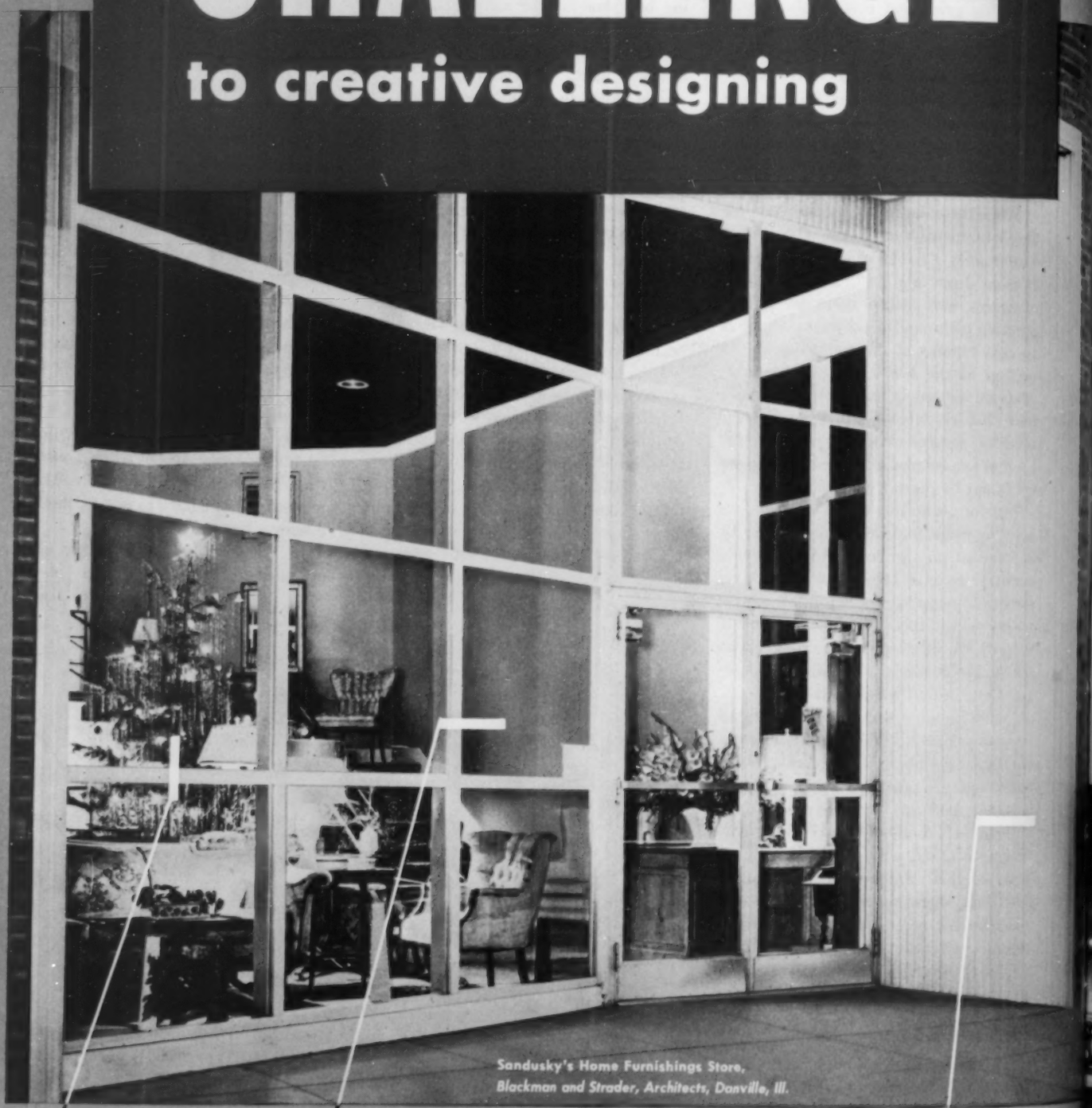
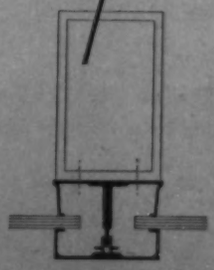
—Drawn for the RECORD *by Alan Dunn*

A modern store front is a CHALLENGE to creative designing



Sandusky's Home Furnishings Store,
Blackman and Strader, Architects, Danville, Ill.

¼ size detail of stock division bar, used horizontally in above store front.



¼ size detail of stock division bar, used vertically with aluminum tubular reinforcement.

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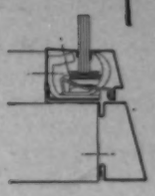
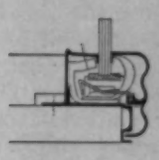
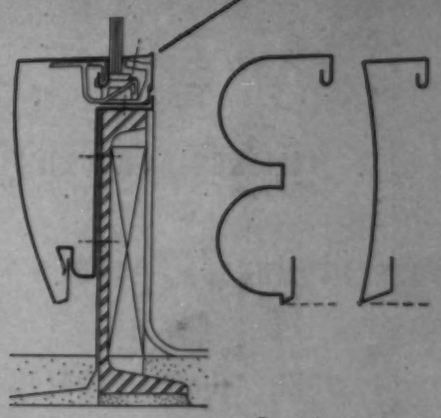


¼ size detail of stock glazing sash above.



One of the many other stock sashes.



Stock bulkhead assembly used in above store front.

Two other stock bulkhead faces which are also available.

Sterchi Furniture Co.,
Salisbury, North Carolina.

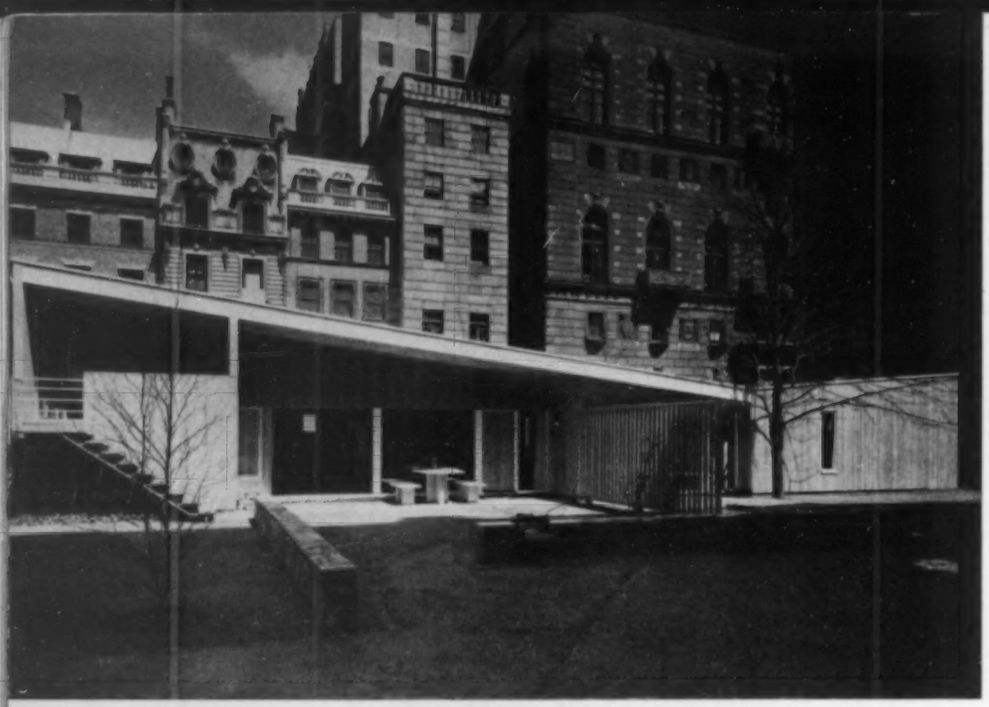
¼ size detail of stock division bar used at left.

Stock corner bar—angles from 90° to 120°, 120° to 165°

Stock reverse corner bar.

Stiffeners shown here are Medium. Also available—Light, Heavy, Heavy X stiffeners.

Stock flush-glazing sash eliminates projecting metal.



Seen from the Museum, the House in the Garden contrasts strangely with the erstwhile stylish homes across the street. The living room (below) is spacious and colorful

MARCEL BREUER'S "HOUSE IN MUSEUM GARDEN" OPEN TO THE PUBLIC

THE "House in the Museum Garden," designed by Marcel Breuer for the Museum of Modern Art, New York City, was opened to an expectant public on April 14. Situated in the Sculpture Garden behind the Museum, the house will remain on exhibition through October 30.

As already reported in the ARCHITECTURAL RECORD (Feb., 1949, p. 24), the house is intended for the commuter, and designed for building in two stages. In the first stage the plan would be that shown below, except that the garage would not be included; later on the garage would be added, with an additional bedroom, bath and sun deck above it. The exhibition model is the completed, three-bedroom version.

As the photos and plan show, the house is long and narrow, with a "butterfly" roof which eliminates the need for circumferential gutters and drains. A single drain passes from the roof down through the center of the house where the inside heating prevents winter freezing.

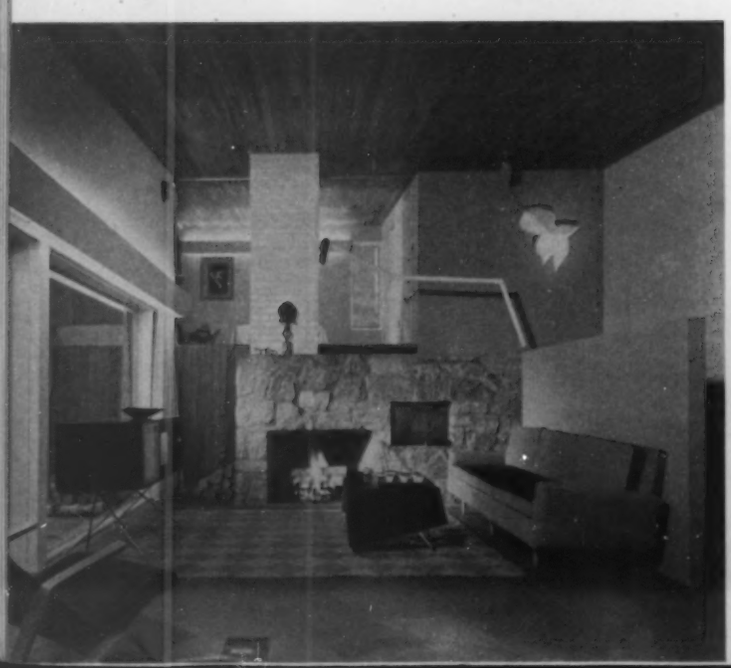
Cypress tongue-and-groove vertical boarding is used both on the exterior and on the ceiling of the living room and some walls of the bedrooms. The natural wood of the interior is coordinated in color with the furniture and draperies. Flooring in most rooms is flagstone, intended for radiant heating installation. The stair and balcony railing is of heavy rope, held in place by stainless steel thin wire cables.

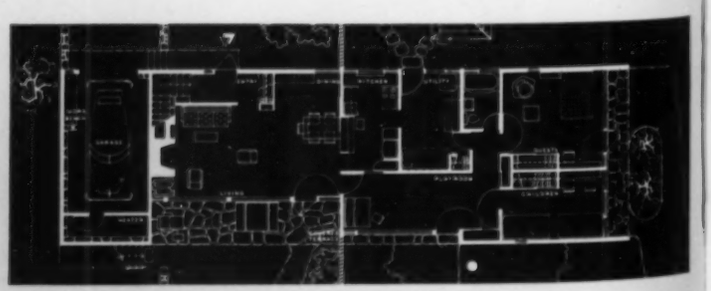
Mr. Breuer himself has designed much of the furniture used in the exhibition house: a radio-television-phonograph in two units, one of which is a coffee table and book rack containing the switches and controls; tables in various sizes, each molded entirely of a single piece of plywood; a new line of chairs made of cut-out plywood with cane seat and back. Other furniture, selected by Mr. Breuer, is by Eero Saarinen and Charles Eames.

Draperies are Chinese silk shantung throughout — natural color in the living room, screen-printed in a broad stripe pattern of brown and blue on natural ground in the playroom. An abstract relief over the stairway in the living room was created by Jean Arp especially for the exhibition.

The brochure issued by the Museum in connection with the exhibit reports that Mr. Breuer has received fixed bids for the construction of four variations of the house from a company prepared to build it in Connecticut, New Jersey and southern New York. The prices quoted range downward from $27,475 for a three-bedroom model similar to that in the Museum Garden to $19,975 for a two-bedroom model with wall, ceiling and floor finishes of alternate materials.

Photo by Ezra Stoller: Pictor





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THE RECORD REPORTS

(*Continued from page 7*)

equipment, plans, etc., the amount of work covered by all plans completed totals up to an estimated $1,260,412,000. Repayments on $286,543,000 worth of work leave $973,869,000 as the amount of public works construction — non-federal in nature — that was planned and ready to go early this year.

The FWA researchers estimate that planning carried on by states and cities without federal assistance would add about $600 million in public works projects to this shelf of "ready" construction. Also added into the overall sum is $900 million of work represented in highway plans already prepared. All these sums put together represent the FWA guess that approximately $2.5 billion is the total for all non-federal public works projects planned and ready to start.

And this falls far short of being a comfortable backlog, particularly in the face of present economic trends, say the public works officials. As Gen. Fleming stated: "The projects are not ready."

What would be a comfortable margin? How much planning would have to be on the shelf to assure the construction industry taking care of its own potentially unemployed in event of a real recession? Certainly much more than an amount not even equal to the going volume of work, they say.

Measuring the present shelf against accumulated needs leaves it woefully inadequate, or "pitifully small," as Gen. Fleming prefers to put it. Some of the more extreme estimates have placed this total need at $100 billion, exclusive of strictly federal projects.

Here the Fleming statement bears repeating: "If private construction should falter in the months ahead, we are in no position to bridge the gap by expanding our program of state and local public works. The projects are not ready."

With a note of caution the Administrator added: "That statement is in no sense a forecast of future business trends. Nor does it suggest launching a large-scale program of public construction at this time. I do believe, however, that an adequate reserve, planned and ready, would be a powerful economic lever in time of need. Advance planning can provide that lever."

(*Continued on page 14*)

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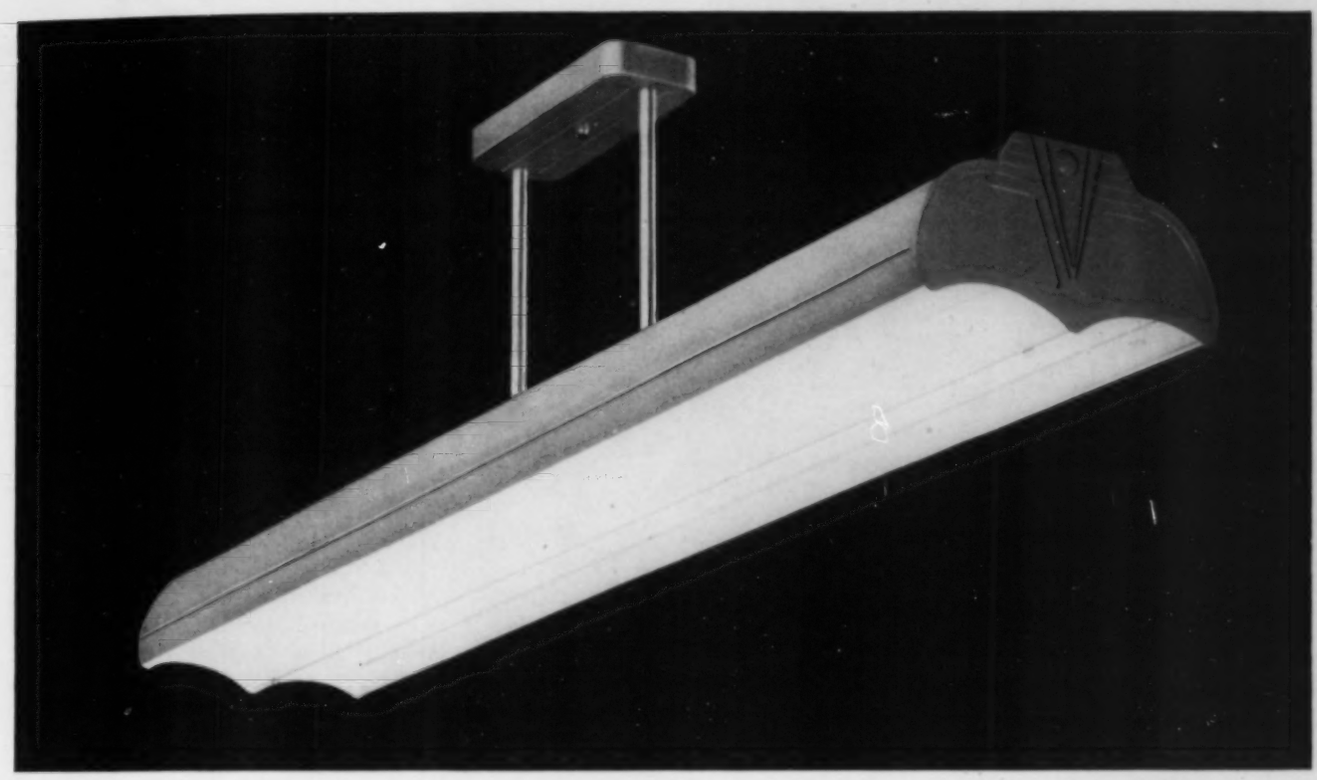

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THE RECORD REPORTS

(*Continued from page 12*)

Congress Speeds Its Work

Finally over the Senate filibuster hump, Congress began enacting laws speedily in an effort to compensate for the lost time. Attention was given to emergency measures first and the building industry watched with some satisfaction as the renewal of rent controls for another 15 months was passed without bringing new construction under the regulations. In fact, the bill reaching President Truman's desk was more liberal in intent than its predecessor or the stronger measure that the Administration had asked for.

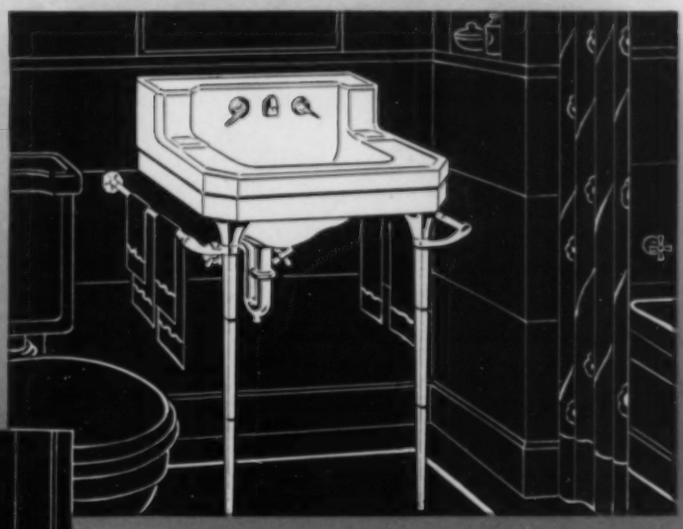
Whether or not it would result in construction of any more rental housing was problematical since the action of local bodies and state governors on the decontrol question could not be judged immediately. Rent control extension, however, saved the important federal aids to housing contained in Section 608, Title VI of the National Housing Act. This Federal Housing Administration home loan insurance program, applying to multiple rental units in the main, was extended 90 days beyond its March 31 deadline in the older rent control bill. This will give time for more deliberate consideration of this "life blood" legislation, the continued extension of which keeps the applications flowing on multiple rental housing units.

Much significance is placed in the fact that Congress now has formally recognized the downward trend in construction costs and prices. This was evidenced in House acceptance of the general 15 per cent reduction formula recommended by its committee on appropriations. This first showed up in the money bill covering Army's civil works program for the fiscal year beginning July 1. It was then carried over into the Interior appropriations bill, applicable to the extensive construction program of the Bureau of Reclamation.

In studying the question of how much money to recommend for Army Corps of Engineers civil works projects during the coming fiscal year, the Appropriations committee of the House probed diligently into the question of cost trends. It carefully reviewed indices of costs. In this work members became convinced that the cost "plateau" had been reached and that the downward turn had been taken.

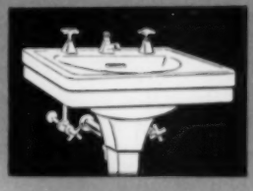
(*Continued on page 16*)

Richmond's at home in any home!



The BROMLEY, smart and modern, adds beauty wherever it goes! A shelf-back, square bowl lavatory with front overflow and anti-splash rim—available with or without chrome-plated legs and towel bars. Ideal for either powder-room installations or master bathrooms. Plate #G-132.

The new RICHLEDGE—only 19" x 17" overall—has all the big lavatory features. This compact wall-hung unit will fit into the smallest bathrooms as well as powder rooms. Small in size and low in price, the Richledge is perfect for the modern home. Chrome-plated legs and towel bars available. Plate #G-152. Richledge also obtainable in 18" x 15" size.

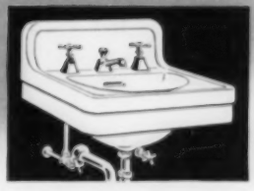


The Kingsbury

Good-looking lavatory slab, shown here with center leg, features rectangular bowl, rear outlet, integral open overflow and anti-splash rim. Also available with chrome-plated legs and towel bars. Plate #G-110.

The Norman

High-back, wall-hung lavatory, illustrated on right, is designed for all types of domestic or commercial installations. Has rectangular bowl plus rear outlet, open overflow and anti-splash rim. Plate #G-120.



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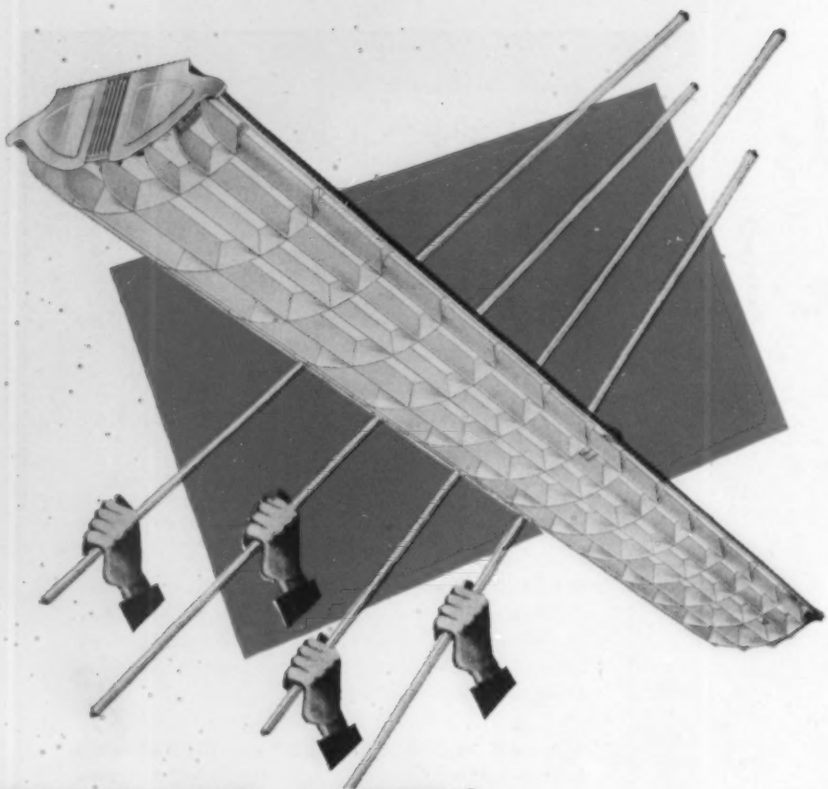

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THE RECORD REPORTS

(*Continued from page 14*)

Modular Coordination Again

Still seeking a way to build houses to sell for less money without sacrificing architectural and other standards, the various segments of the building industry are joining in the economy housing campaign which has been on for several months. The housing agencies of the

(*Continued on page 20*)

CONFERENCE AT ANN ARBOR

"Time for Change" was the theme of the Seventh Ann Arbor Conference held at the University of Michigan on April 1 and 2 under the auspices of the College of Architecture and Design, Wells I. Bennett, Dean. Malcolm R. Stirton was conference chairman.

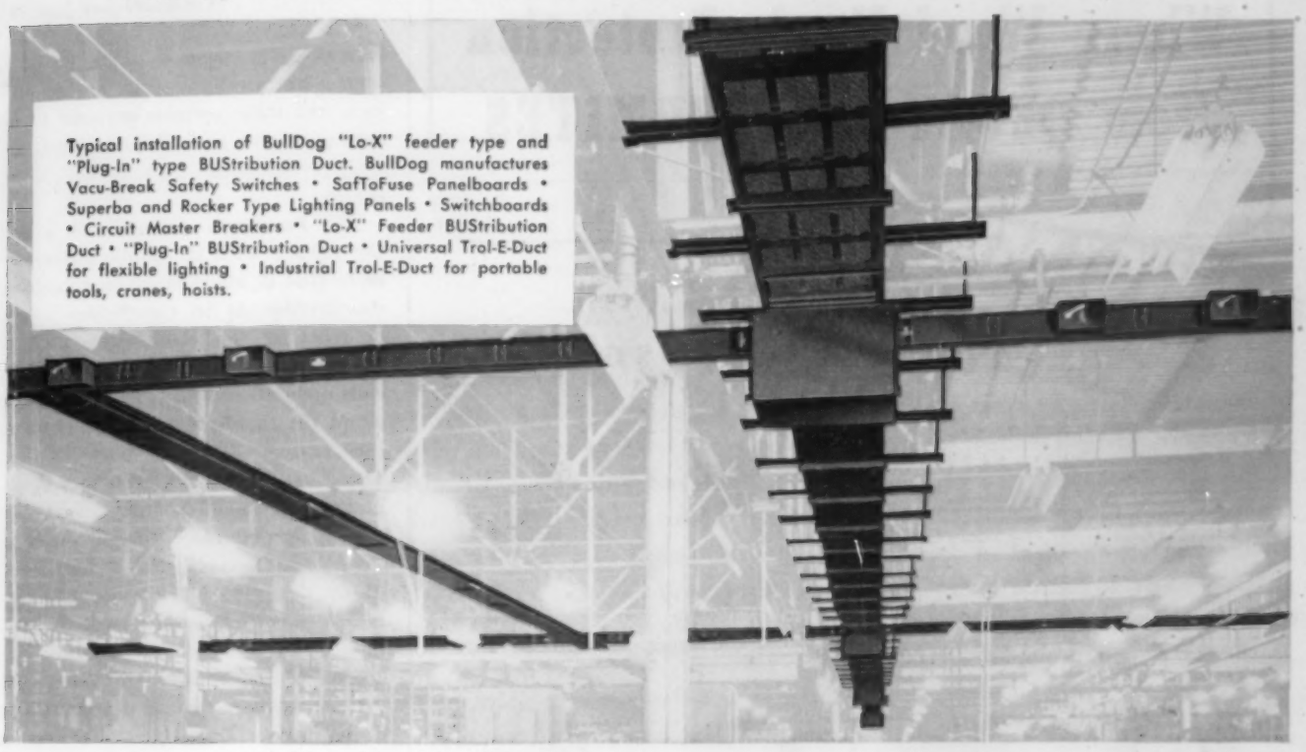
Branson V. Gamber presided at the opening session on "Communities." J. Marshall Miller discussed "Trends and Experiences in Community Development"; Harold M. Mayer suggested "Types of Community Development — Areas of Needed Research"; and an address on "Community Design" by G. Holmes Perkins completed the formal program.

"Buildings" occupied the afternoon session of the first day, with Walter A. Taylor presiding. Speakers included Nathaniel A. Owings, "Trends in the Design of Large Buildings and Groups of Buildings"; Richard N. Jones, "The Industrial Approach to the Housing Problem"; and R. Buckminster Fuller, "Preview of Building."

"Contemporary Equipment in Relation to Architecture," "New Home Building Methods and Materials," and "Heating and Design Integration," considered by Harold Van Doren, Richard Pratt, and Douglas Haskell respectively, formed the basis for the third session, on "Equipment." Kenneth C. Welch was chairman.

Joseph Hudnut keynoted the final session, on "Education," at which Mr. Stirton presided, with an address entitled "The Gate into the Desert." Speakers on the panel which followed were: Turpin C. Banister, "Some Current Problems in Architectural Education"; Robert A. Little, "Theory Taught and Practice Practiced"; and Matthew Nowicki, "Education at the School of Design at Raleigh."

This message will also appear in a broad list of publications that are read by the men you seek to influence . . . your prospective clients



Typical installation of BullDog "Lo-X" feeder type and "Plug-In" type BUStribution Duct. BullDog manufactures Vacu-Break Safety Switches • SafToFuse Panelboards • Superba and Rocker Type Lighting Panels • Switchboards • Circuit Master Breakers • "Lo-X" Feeder BUStribution Duct • "Plug-In" BUStribution Duct • Universal Trol-E-Duct for flexible lighting • Industrial Trol-E-Duct for portable tools, cranes, hoists.

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BullDog "Lo-X" BUStribution Duct, for secondary feeders, is prefabricated to exact performance standards. Ventilated construction and paired-phase arrangement of silvered-copper bus bars reduces temperature rise, assures high current-carrying capacity and reduces reactive voltage drop. BUStribution Duct is sturdily built for years of finest service.

Your local BullDog Field Engineer will be glad to show you a BullDog BUStribution system in your own neighborhood. Let him look over your requirements and answer your questions.

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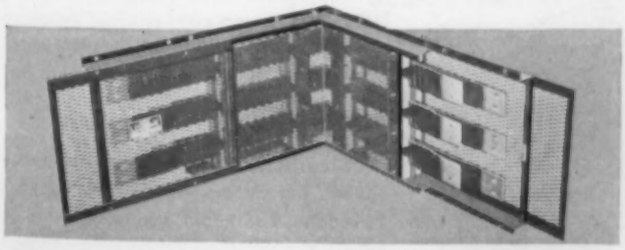
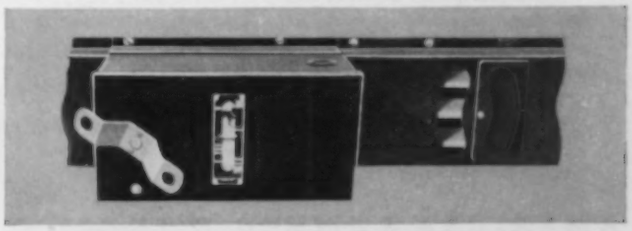


Section of "Lo-X" BUStribution Feeder Duct, used for main secondary power feed. "Lo-X" Duct is prefabricated in ten-foot lengths, in capacities from 600 Amps. to 4000 Amps., 600 Volts or less. Close spacing and paired-phase arrangement of bus bars reduces reactive voltage drop.



Section of "Plug-In" Duct, showing Vacu-Break Bus Plug for tap-off purposes. Crescent-shaped openings make it impossible to insert plugs incorrectly. Each ten-foot section of "Plug-In" Duct has ten such openings. Capacities: 200 Amps. to 1350 Amps., 600 Volts or less.

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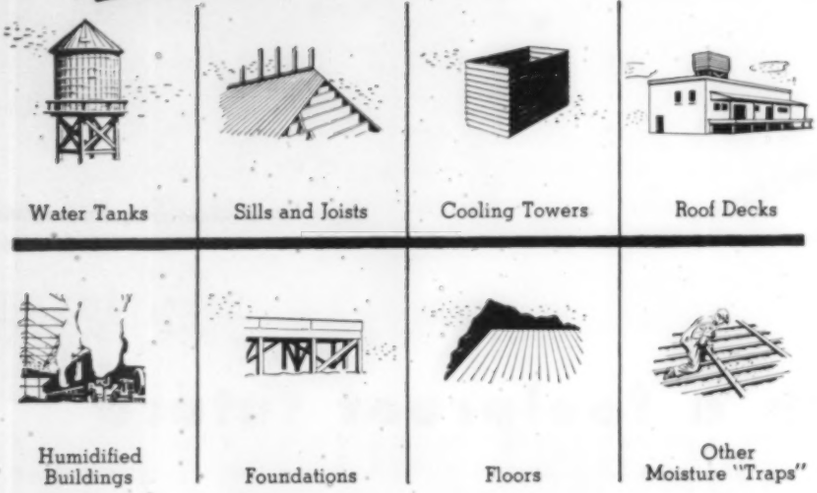

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THE RECORD REPORTS

(*Continued from page 16*)

federal government continue to push their countrywide meetings on the subject; and these sessions are said to be getting results, even if the progress toward construction of a lower cost home *is* slow.

The Producers' Council has joined the parade with its public announcement that it would emphasize modular coordination as an expeditious means of reaching the economy goal. The Council's president, James M. Ashley, calls upon all architects and builders to adopt the coordination principles on at least one new house or other building. Those in the industry who thoroughly understand modular design, said Mr. Ashley, are convinced it will result in substantial savings and reduce cost. Many designers already are planning buildings on the modular basis. When a number of these buildings have been completed and actual savings compared and averaged, the Council plans to cite authoritative figures on the economies effected — savings that will be even greater than is now generally expected, according to President Ashley. He has little doubt that the savings so demonstrated will be sufficiently substantial to warrant adoption of modular coordination on at least an experimental scale by everyone concerned with designing and putting up buildings.

The public is not allowed to forget that modular coordination as a building principle has been endorsed by the American Institute of Architects, the Housing and Home Finance Agency and other industry groups which have given it careful study. Look for still more attention to be given plan of building by "multiples of four" if Congress passes S. 1070, the comprehensive housing measure. At this writing, the bill had cleared the Senate Banking committee but had been delayed by the extended filibuster. The House Banking committee had not yet scheduled its hearings on housing bills but was expected to clear its measures within 10 days or so after these hearings do get started.

VA Hospital Cutback Studied

Senator Claude Pepper of Florida concluded his subcommittee hearings on President Truman's January order to reduce the Veterans Administration hospital construction program by 16,000 beds and promised he would try to get

(*Continued on page 22*)

ARCHITECTURAL

RECORD

WE BELIEVE . . .

AN EDITOR'S work (and his publication's) are conditioned by his beliefs, conscious, unconscious (or self-conscious) as they may be. His policy and program are determined in most part by his convictions regarding basic truths as determined by him through reason and intuition, education and experience, induction and deduction. His beliefs, policy and program are determined by his innate sensibilities, his perception and apperception, and his acquired knowledge, understanding and wisdom. His beliefs, then, influence the selection of material and the placing of emphasis.

We believe that architecture is a fine art — an art that can and should use all that science and engineering have to offer of ways and means in creating increasingly better environments and facilities for all human activities.

We believe that good architecture has an emotional as well as physical content, social as well as economic import, esthetic as well as utilitarian values.

We believe that better architecture can result only from thorough analyses of the problems to be solved, full knowledge of past and possible means of solution available, plus conscious creative and imaginative effort.

We believe that the architect must engage many minds in this effort, minds with varying engineering skills and other specialized knowledge, as part of the creative design team.

We believe that the architect, the creative designer, is and should be the coordinator of the efforts of the collaborators.

We believe that the architect is both morally and legally responsible for the design in all its implications, structural, economic, social and esthetic.

We believe that his functions and interests are unique, broad and most important, and that he can best be served by a magazine devoted exclusively to them.

We believe that by precept and example, by project and exposition, illustration and data we can best provide ideas, information and inspiration that will prove most useful to one group — the men who design our environment — buildings, communities, cities and regions.

We believe in publishing constructively, objectively, for the greatest possible number of architects, young and old, in every section of the country, in offices small and large, without prejudice or favor.

We believe in the inevitable change and development in architecture and in its constant evolutionary improvement. And these significant ideas and developments will continue to be the editorial meat of ARCHITECTURAL RECORD.

Kenneth K. Stowell
EDITOR

THE EIGHTY-FIRST CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS

Houston, Texas, March 15th to 18th, 1949

THE Eighty-First Convention of the American Institute of Architects held at Houston March 15th to 18th, 1949 will long be remembered as the Convention at which Frank Lloyd Wright was awarded The Gold Medal of The Institute, its highest award. It is really a memorable occasion, a long-overdue honor presented to America's most prominent architect, to the man whose works and teaching have had greater effect on the architecture of this country and of other countries than any other living architect. President Douglas W. Orr read this glowing tribute, the Citation:

"Prometheus brought fire from Olympus and endured the wrath of Zeus for his daring; but his torch lit other fires and men lived more fully by their warmth.

"To see the beacon fires he has kindled is the greatest reward for one who has stolen fire from the gods.

"Frank Lloyd Wright has moved men's minds.

People all over the world believe in the inherent beauty of architecture which grows from need, from the soil, from the nature of materials. He was and is a titanic force in making them so believe.

"Frank Lloyd Wright has built buildings.

Structure, in his hands, has thrown off stylistic fetters and taken its proper place as the dominant guiding force in the solution of man's creative physical problems.

"Frank Lloyd Wright has kindled men's hearts.

An eager generation of architects stands today as his living monument. By precept and example he has imparted to them the courage to live an architectural ideal. They are reaching leadership in our profession, themselves dedicated to creating order and beauty, not as imitators, but as servants of truth.

"It is for that courage, that flame, that high-hearted hope, that contribution to the advancement of architectural thought that this Gold Medal, the highest award of The American Institute of Architects, is presented to Frank Lloyd Wright."

Bob Bailey Photos

Frank Lloyd Wright received The Gold Medal of The Institute from President Douglas William Orr. Below, attentive listeners to his speech of acceptance overcrowd the ballroom of the Rice Hotel

Caroline Valento, Houston Post Photo

Frank Lloyd Wright received the honor graciously and smilingly, amid the thundering applause of the multitude of architects, guests and students who overflowed the great ballroom of the Rice Hotel. With his usual dignity, poise and ready wit, his inimitable delivery, he responded with a resumé of his early struggles and his principles of professional practice, to which he has adhered through good times and bad, through vicissitudes that would have crushed a man of lesser caliber, stamina, and convictions. He reiterated his opinions of our modern civilization, our subservience to science, our lack of individuality and individual integrity, and made a plea for a renewed sense of honor, the honor of an individual true to himself. It was, indeed, a memorable occasion in which The Institute honored itself as well as the recipient of its highest award, The Gold Medal.

That this Convention was one of special interest is attested by the fact that it drew one of the largest attendance records of recent years. Some 626 delegates and members were registered, and at least double that number were present if one includes the guests, students, members of Producers' Council, educators and others who came from far and near. The fact that there were such large numbers of the younger members of the profession present speaks well for the vitality of The Institute, and for its future of continued progress. It cannot be denied that the presence of Frank Lloyd Wright had much to do with this large group actively interested in furthering the objectives of The Institute, and intent upon making it of "ever-increasing usefulness to society."

The regular sessions of the Convention got under way Tuesday morning, with President Douglas William Orr presiding. The delegates were cordially welcomed to Houston and to Texas by Kenneth Franzheim, president of the Houston Chapter, by Thomas D. Broad, the Regional Director of the Gulf States District, and by the Hon. Oscar F. Holcomb, Mayor of Houston.

The Fine Arts Medal of The American Institute of Architects was awarded to Louis Conrad Rosenberg of

Convention life: a surrealist interpretation of argument, persuasion and amusement ever present during Convention activities — the pictorial result of an inadvertent double exposure when attempting to film an argument between ex-President Jim Edmunds and President-to-be Ralph Walker

Fairfield, Connecticut, a man whose distinguished etchings and drawings are well known to the entire profession and which now grace many collections in museums and libraries throughout the country, for they are "magnificent records of ageless architecture."

The Seminars, which have become the most interesting, informative and inspiring parts of the Convention sessions, were this year devoted to two vital and timely subjects. Of particular interest this year were the addresses and discussion periods devoted to "American Architecture in the Atomic Age." The Convention was fortunate in having William Sterling Parsons, Rear Admiral, U.S.N., discussing this problem frankly and squarely. Admiral Parsons was associated with the Atomic Bomb Project ever since 1943, and he was the weaponeer and bomb commander in the plane which dropped the first atomic bomb on Hiroshima. It was his considered opinion that "the sound approach to city and structure design is to continue to emphasize primary function, and to add atomic blast and radiation flash to the list of natural and man-made catastrophes which may at some time be encountered." "An attempt to provide complete (necessarily underground) protection against atomic attack at close range would cost so much and would interfere so greatly with what we have come to regard as normal living, that it is unacceptable. The only alternative is to accept a 'calculated risk', the military euphemism for taking a chance." "Without question, shelters can protect those who get to them against anything but a direct hit. Adequate warning will assure that a maximum number get to shelters." "The most important element of atomic and other defense is our attitude toward it. We would be self-defeated if we saturated our energies and our economy in a hysterical effort to buy absolute safety."

At a later session, Sumner T. Pike, member of the U. S. Atomic Energy Commission, stressed the necessity of designing for peace. "We are going on the offensive to prove to the world that the genius and cooperation of members of free nations were able to harness the energy of the atom's nucleus because they were free. Our offensive must prove to the world that we have a higher ambition and a greater destiny than burrowing into the earth and spending our means on unproductive engines of destruction." "We should not squander our birthright and our opportunity by illy preparing for our doom instead of pursuing our ambition." "It is immoral and infamous for us to abandon the basic premise of our national life by diverting our means and our energies into such illy conceived proposals as putting steel mills underground and dislocating our economy in an attempt to gain at best partial protection from an uncertain hazard." "Our strongest defense, or the best offense in either a cold war or a hot war is the healthiest and best-educated population, and the most efficient industrial machine."

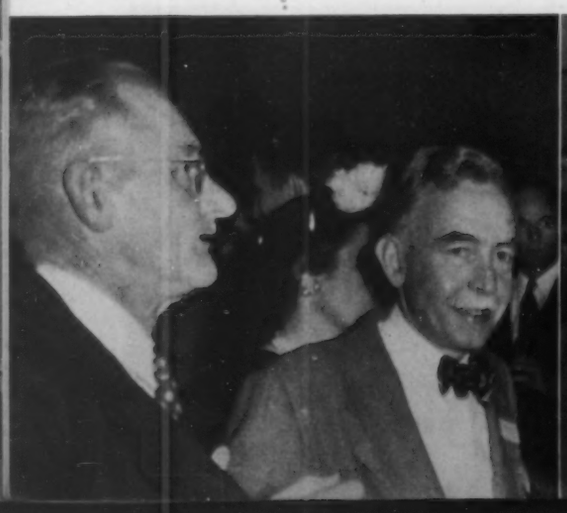
Major General Philip B. Fleming, Administrator, Federal Works Agency, spoke of "Tomorrow's Trends in Federal Building." He quoted the National Securities Resources Board statement "There is no known military defense against the atomic bomb itself except space." He said, "When that fact is set against the existing concentrations of population and industry here in America, a broad trend toward decentralization is clearly indicated." "This is a healthy development, quite apart from its obvious significance in terms of national security." He spoke of the need for further de-

Newly-elected Fellows from Atlanta, Georgia, George Harwell Bond and Harold Bush-Brown

Hugh Stubbins of Lexington, Massachusetts, obviously in serious conversation

President Douglas Orr's attention is not all on Glenn Stanton, Vice President

K. K. Stowell Photos



Bob Bailey Photo

The Board of Directors of the A.I.A. at the 1949 Convention: Seated (left to right) Paul Gerhardt, Jr., Director, North Central States District; Clair W. Ditchy, Secretary; Douglas William Orr, President; Glenn Stanton, Vice President; Charles F. Cellarius, Treasurer; Joseph D. Leland, Director, New England District. Standing (left to right) George Cannon Young, Director, Western Mountain District; Lorentz Schmidt, Director, Central States District; Thomas D. Broad, Director, Gulf States District; George B. Cummings, Director, New York District; James H. Mitchell, Director, Sierra-Nevada District; Kenneth C. Black, Director, Great Lakes District; Allan H. Neal, Director, Middle Atlantic District; Ross Shumaker, Director, South Atlantic District

centralization of federal buildings and government functions, a movement which is already under way. Also, that F.W.A. plans to use local architects as much as possible, and local materials wherever these are adaptable. Dr. Philip Morris Hauser, Associate Dean, Division of Social Sciences and Professor of Sociology at the University of Chicago, discussed some population trends and their implications. He noted that between 1940 and 1970, while the U. S. population is increasing from 132 million to about 160 million, the U.S.S.R. is likely to increase from 174 to about 250 million. "The real import of declining rates of population growth in the United States in the atomic age depends upon the ability of man to match his technical prowess with social and political wisdom." Among many other interesting implications of population trends was that in regard to school buildings. "Elementary school enrollment in 1957 will be 46 per cent above the level of 1947." This means an increase in school facilities. The peak in high school and college enrollments will not be reached until after 1960. "The need for additional school facilities between now and the 60's will, in subsequent years, be transferred to an excess of school plant which may call for some form of useful conversion."

James R. Edmunds, Jr., F.A.I.A., presided at the Seminars on Atomic Age problems.

The Seminars devoted to color, with Waldron Faulkner, A.I.A., presiding, were fascinating, lively, entertaining and informative. Truly they had to be seen as well as heard to be appreciated, for there were demonstrations, experiments, and slides which sometimes took on the aspect of magic, black, white, or multicolored, as the case might have been. Color was discussed from every known angle, and from several angles that architects are not always fully aware of. The physical, physiological and psychological aspects of color, its perception, identification and use, were all interestingly demonstrated and discussed by five of the country's leading scientists and color experts and consultants. In order of their appearance, the subjects and the experts were as follows: Demonstration of "Color Phenomena" by Isay A. Balinkin, Associate Professor of Experimental Physics, University of Cincinnati. Demonstration on "Seeing Light and Color" by Ralph M. Evans, Superintendent color quality control processes, Eastman Kodak Co. Demonstration on "Color Order Systems" by Carl E. Foss, Color Consultant, Princeton, N. J. "Functional Color and the Architect" by Faber Birren, Color Consultant, New York City. (See also article on "Color in Hospitals," page 145, this issue ARCHITECTURAL RECORD.) "Color in Architectural Practice" by Julian E. Garnsey, Associate Professor of the Princeton Univer-

William Stanley Parker of Boston is taken by surprise as he awaits breakfast with Carlos Contreras of Mexico City

Marion Manley of Miami, Florida, consents to pose with old friend, Clair Ditchy of Detroit, Institute Secretary

Ernest J. Kump of California and Henry Kamphoefner, Head of North Carolina School of Design, find something amusing

sity School of Architecture, Color Consultant, Princeton, N. J. It is obviously impossible to give even a resumé of the colorful proceedings at these intensely interesting Seminars. It would take books, and well-illustrated books, full of color, to present adequately even the highlights of these stimulating addresses.

Wednesday night there was a colorful and enjoyable occasion at the much-publicized Shamrock Hotel. This was the President's Reception, held in the Shamrock Room of that fabulous hostelry while it was in the throes of getting ready for its grand opening on St. Patrick's Day. Much excitement had been whipped up in Houston by the arrival of a bevy of noted movie stars from Hollywood who were constantly surrounded by moppets seeking autographs. In spite of the confusion, and the decoration, or shall we call it décor, the reception was decorous and delightful.

For the first time in many years the delegates assembled had the opportunity of making a choice between candidates for most of the offices of The Institute. The delegates took this responsibility seriously and every delegate but one exercised his prerogatives and cast his ballot. The results of the election, as reported previously (see page 7, April issue), were as follows: for President and Director, Ralph Thomas Walker, *New York, N. Y.;* for First Vice President and Director, Glenn Stanton, *Portland, Ore.;* for Second Vice President and Director, Kenneth E. Wischmeyer, *St. Louis, Mo.;* for Secretary and Director, Clair W. Ditchy, *Detroit, Mich.;* for Treasurer and Director, Charles F. Cellarius, *Cincinnati, Ohio;* for Director New England District, Harold B. Willis, *Boston, Mass.;* for Director New York District, Arthur C. Holden, *New York, N. Y.;* for Director Central States District, Wilbur H. Tusler, *Minneapolis, Minn.* The unsuccessful candidates were: for President and Director, William W. Wurster, *Cambridge, Mass.;* for First Vice President and Director, Marion I. Manley, *Coral Gables, Fla.;* for Second Vice President and Director, Pietro Belluschi, *Portland, Ore.;* Paul Gerhardt, Jr., *Chicago, Ill.;* Walter W. Hook, *Charlotte, N. C.;* for Secretary and Director, Roy Norman Thorshov, *Minneapolis, Minn.;* for Director New York District, Henry V. Murphy, *Brooklyn, N. Y.;* for Director North Central District, Thomas F. Ellerbe, *St. Paul, Minn.*

With appropriate ceremony, twenty-eight members of The Institute who had achieved eminence in their profession were elevated to Fellowship in The Institute. The following men were advanced to Fellowship at the Convention in 1949: George Harwell Bond, *Atlanta, Ga.;* Birdsall Parmenas Briscoe, *Houston, Tex.;* Harold Bush-Brown, *Atlanta, Ga.;* Arthur Feitel, *New Orleans, La.;* Matthew W. Del Gaudio, *New York, N. Y.;* Alfred Charles Finn, *Houston, Tex.;* Kenneth Franzheim, *Houston, Tex.;* Wallace Kirkman Harrison, *New York, N. Y.;* Harry Hake, *Cincinnati, O.;* Walter Williams Hook, *Charlotte, N. C.;* Earl Theodore Heitschmidt, *Los Angeles, Calif.;* Burnham Hoyt, *Denver, Colo.;* Daniel Paul Higgins, *New York, N. Y.;* James William Kideney, *Buffalo, N. Y.;* Jerrold Loebl, *Chicago, Ill.;* Harry L. Mead, *Grand Rapids, Mich.;* John Crosby Brown Moore, *New York, N. Y.;* Milton Bowles McGinty, *Houston, Tex.;* Angus Vaughn McIver, *Great Falls, Mont.;* Frederic Lindley Morgan, *Louisville, Ky.;* Nathaniel Alexander Owings, *Chicago, Ill.;* Louis Skidmore, *New York, N. Y.;* John Llewellyn Skinner, *Miami, Fla.;* Henry Johnston Toombs, *Atlanta, Ga.;* Harold Reeve Sleeper, *New York, N. Y.;* Glenn Stanton, *Portland, Ore.;* Joseph Lewis Weinberg, *Cleveland, O.;* William Ward Watkin, *Houston, Tex.*

As usual, The Institute's business matters were taken care of by the reading of the Report of the Board of Directors, and the appropriate actions being taken by the delegates assembled. Of most universal interest, probably, was the action taken in regard to the raising of dues. The action taken permits the Board of Directors to determine the dues for the current year, the annual dues for corporate members for each year, such dues not to exceed $50.00 per year. Architects who wish to certify that their net professional earnings were less than $5000 per year will pay a minimum base amount of $25.00 per year, except for those who come under the provisions already made for new members of the Institute.

At this Convention there was inaugurated a program of Institute Honor Awards for distinguished architectural work in two classes, residential architecture and school design. First Honor Award in the residence category went to Frederick L. Langhorst of San Francisco for a house for Dr. and Mrs. Alex Ker, (ARCHITECTURAL RECORD, April, 1948, pp. 104–108), and the top Honor

Newly-elected President Ralph Walker smilingly receives congratulations from Mrs. and Mr. Harold Sleeper; the latter is the President of the New York Chapter

Thomas D. Broad, Gulf States Director, N. W. Overstreet of Mississippi and Ross Shumaker, South Atlantic Director, discuss the Southern Conference on Hospital Planning at Biloxi

Award for school buildings to Marsh, Smith and Powell of Los Angeles for the Corona Del Mar School.

Others who received Awards of Merit for residences were: Wurster, Bernardi and Emmons, *San Francisco, Calif.*; Thornton Abell, *Santa Monica, Calif.*; Mario Corbett, *San Francisco, Calif.*; Francis E. Lloyd, *San Francisco, Calif.*; Robert M. Little, *Miami Beach, Fla.*, Arthur T. Brown, *Tucson, Ariz.*; L. Morgan Yost, *Kenilworth, Ill.*; Carl Koch and Associates, *Belmont, Mass.*

Architects who received Awards of Merit for schools were: John Lyon Reid, *San Francisco, Calif.*; Maynard Lyndon, *Los Angeles, Calif.*; Daniel, Mann and Johnson, *Los Angeles, Calif.*; Perkins and Will, *Chicago, Ill.*; O'dell, Hewlett and Luckenbach, *Detroit, Mich.*; Donald Barthelme, *Houston, Tex.*; George L. Dahl, *Dallas, Tex.*

Albert F. Heino of Chicago was Chairman of the National A.I.A. Committee on Honor Awards for current work. Serving with him were Harold R. Sleeper, *New York, N. Y.*; Richard M. Bennett, *Chicago, Ill.*; Samuel E. Lunden, *Los Angeles, Calif.*; and Charles F. Cellarius, *Cincinnati, O.*

The jury for residential designs was Walter F. Bogner, of Harvard University, Chairman; Karl Kamrath, *Houston, Tex.*; Kenneth K. Stowell, *New York, N. Y.*; Mrs. Katherine Morrow Ford, *New York, N. Y.*; and John Dinwiddie, *San Francisco, Calif.*

The jury on school design was Chairman Walter Hook, *Charlotte, N. C.*; Howard D. Smith, *Columbus, O.*; John L. Rex, *Los Angeles, Calif.*; Dr. Ray L. Hamon of the U. S. Office of Education, *Washington, D. C.*; Ernest Langford, *College Station, Tex.*

A large and impressive exhibition of photographs and plans of Mexico's latest architecture was a very interesting feature of the Convention. This was arranged through Sr. Roberto Alvarez Espinosa, representing the Mexican Ministry of Education. Five Mexican architects and their wives were present at the Houston Convention. Quite naturally, therefore, the post-Convention trip to Mexico, D. F., and environs was terrifically popular and was enthusiastically enjoyed by all. But that is another story.

Kenneth C. Black, Director, Great Lakes District, confers with Guillermo Zarraga, President of the Mexican Society of Architects while internationalist Julian Clarence Levi discusses affairs with Gonzalo Garita of Mexico City

Texans Ralph Buffington and Charles S. Chase of Houston hear from Everett V. Welch of Dallas

Waldron Faulkner of Washington, D. C., color seminar Chairman, with Wylie Walker Vale of Houston and color consultant Julian Garnsey of Princeton, N. J.

Louis G. Hesselden of New Mexico with James E. Gambaro, Brooklyn Chapter President, and Henry S. Churchill of New York at the President's Reception at the Shamrock Hotel

K. K. Stowell Photos

Mrs. and Mr. Donald Kirby of San Francisco (President, Northern California Chapter) with Walter A. Taylor, program director, Washington, D. C., and Thomas S. Holden of New York

K. K. Stowell Photo

Left, Bernard Ralph Maybeck's characteristic imaginative and logical use of native materials in the Church at Berkeley, Cal., 1910. Center, typical false-front rows, San Francisco. Right, clean-cut gracious dignity on a narrow lot. A residence designed by Gardner Dailey, architect

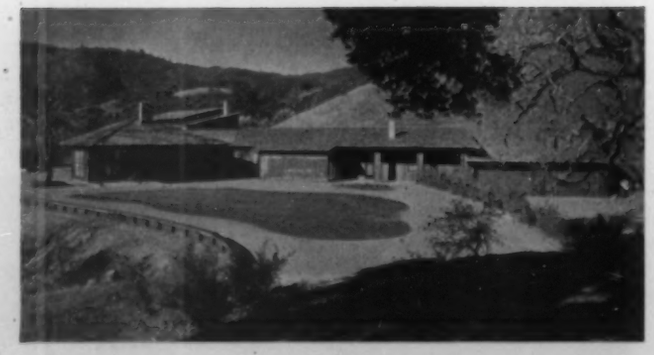
D Haskell Photo

Roger Sturtevant Photo

IS THERE A BAY AREA STYLE?

The term "Bay Area Style," first mentioned by Lewis Mumford in the *New Yorker* then bandied about at the Museum of Modern Art's symposium, attaining international prominence as an accepted phrase in the pages of the London *Architectural Review* has caused discussion, self-examination and, finally, concern on the part of many of the Bay Area architects as to whether or not there are grounds for such a characterization. Among these were the members of Telesis, the Bay Area's group of younger architects, landscape architects and planners, whose collaborative exhibit a decade ago drew thousands of visitors and was an enlivening influence on both the public and the profession. Prompted by a concern lest the term become so widely accepted that they would find themselves prematurely forced into a style, they asked the opinion of some of the men whose work is the object of the term. The RECORD presents these opinions and examples of the work of each contributor which show wide variety of approach and solution.

Roger Sturtevant Photo



By WILLIAM WILSON WURSTER

THE important thing about the work of the San Francisco Bay area is that it has vitality, and the unique thing about it is there has been real continuity in strong, lively independent work for more than half a century. If there is "a regional quality" it rests mainly on the fact that building which still looks fresh and interesting today has been erected in the Bay area every year since 1895. Of what other region in America could that be said?

By ALBERT HENRY HILL

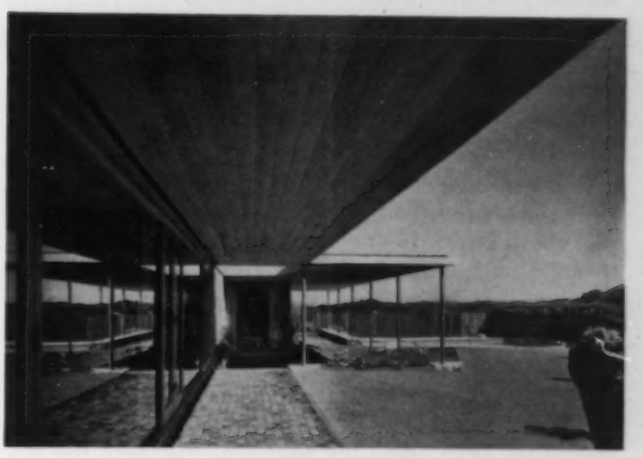
"ARCHITECTURE" was not in the minds of the men who started the building of their homes in the Bay Region after the discovery of gold in Sacramento. They built with wood — the material at hand. As the region developed and settled down, some built with honesty and a straightforward sincerity, without preconceived beliefs or prejudices. They simply built for their needs and conditions.

Soon, the early "prairie houses" of Frank Lloyd Wright were being published and were adapted by local builders. The low and horizontal lines found quick appeal. The honest use of wood was accepted without question.

Simultaneously with this general development, Maybeck was filling the Berkeley hills with his original and vitally creative work. The beauty of his work was and is accepted without fuss or discussion.

Suddenly, in the '20's, borrowed from "culture," the contractors and real estate developers found Spanish and Mediterranean paid very well in Southern California — and all was built in stucco with edgings of tile roofs.

Practically singlehanded, William Wilson Wurster established in his homes his own belief in the honesty of wood frame and his expression of today's living in his homes. His office became a school for many.



Roger Sturtevant Photo

A few in the Bay Area create an expression of their belief in living today in our region — many follow. I do not believe any man of integrity feels he is a part of or is making a "style" — we are a part of an invigorating and vital activity in architecture. We are not working in a "style," we are working in honesty in our beliefs.

By JOHN EKIN DINWIDDIE

IT seems to me, in this age of turmoil, that there is little possibility of developing a true Style anywhere, much less here in the Bay Area.

A Style implies a large group of architects whose work expresses a common philosophy and agreement on principles. The suggestion that we here have in any measure a common philosophy is a sad commentary on our powers of observation. It is the family resemblance of some of the work of a few men which leads to a superficial conclusion that this results from common conviction. But analysis of the work of any of us will reflect a conflict of principles, and a more or less successful attempt to reconcile opposing ideas. The result of our thinking (here and elsewhere) has been an extraordinarily good quality of domestic design, but as good as it may be we don't own it. Only by an accident of geography is so much of it concentrated here.

The Myth of the Bay Region style results I think from common characteristics rather than common principles. Opposing principles may cause them.

First, very large areas of glass. There is at once a major division between those who profess the glass wall and ribbon window, and the pierced-wall advocates. The glass wall and ribbon window must go from wall to wall regardless of what is behind them. They rush by major rooms and stairs with difficulty, past baths and closets indiscriminately, and often achieve beautifully the fake front. (Remember how we used to sneer at Classic buildings showing identical windows for baths

and major rooms?) But the window men, too, have enlarged their "pierced" openings to a point where they resemble the glass-wall school, and a trained eye is necessary to discern the tell-tale jambs.

So where are we? A Bay Region characteristic out of two opposing principles. Either may be successfully challenged for too much glass.

Second, flat roofs. For Wurster, Dailey, or myself, the choice between hip or flat is a matter of convenience and economy (but it is to be noted that houses with hip roofs are not likely to be included among our most "advanced" work). For some, I fear the flat roof simply covers a multitude of planning sins, and is often used because a good handsome pitched roof is more difficult to design. There is no unified case to be made for or against the flat roof.

Third, redwood exteriors. This is a true native material. We long ago exhausted the possible variations. Indeed we have found few uses that Maybeck did not use before us. And we use it rather than plaster where plaster would be better and more fire resistant; just why plaster or other material rather than wood is "not done" can be answered with only the most trifling reasons.

Fourth, "open plan." It produces clean beautiful results, but too often at the expense of practical living. Consider a patient in a hospital bed in a room with a glass wall to the west. I have had the experience. You shiver and shake from the glass in the morning. The afternoons are a nuisance, and the sun *will* assume positions other than that of 3 p.m. Unhappily drapes would not create more comfort; venetian blinds would need adjustment several times a day. How often have we sold people drapes instead of blinds, so "they could have a wall or not as they wish." Pish-posh. What is needed in that hospital is a drape with a small window in it!

The blank wall, corollary of the glass wall, must be inviolate to maintain any genuine principle, to the extent of blanking pleasant vistas or omitting needed openings (windows to you). We are now enjoying a rash of round windows because these do not distort a blank wall too much. But the pierced wall advocates have produced more logical results. Wurster and Dailey have been particularly successful in this and we should be chary of thinking it any the less modern. It all comes out much the same anyway — though again for opposing reasons!

These devices and dodges, together with gadgets of the moment such as patent flue chimneys, louver screen walls, pipe columns, etc., determine largely similarity of result, which threatens to become a group of clichés.

We are far too concerned with the dramatic effects of following a theory, tenable or not, to its extreme. Cantilevers attempt gymnastics logical only in concrete — concealed steel allows wood design to profess magically the impossible. Masses are wangled into surging forms and many houses seem to be on a leash, striving to be elsewhere. For me, *Repose* is an essential of good design, and I am quite content to leave expressions of power to designers of locomotives and steam shovels; and drama where it belongs — in the theater.

Obviously, I am concerned with sins of omission, for there is the heart of the question. The limited framework within which we choose to work is one large reason for family resemblance.

A final omission to be found in all work today (Wright excepted) is the absence of ornament and playful detail. For the first time in history architects avoid it deliberately. It is my conviction that this is a significant and dangerous inhibition of our time.

We can no longer ignore the cry that modern work is cold and bare. This cry springs from a deep instinctual need of all people, and like thirst for water becomes more insistent with frustration. This bareness in work of today is part of the Bay Region effect, but I for one intend to get more human warmth in my houses if I have to carve some linenfold myself in the beautiful bare surfaces.

Well, if you see an English house you can pretty well prove its worth, there is plenty of precedent. But when Contemporary work is on trial, all you get is a lot of argument. No precedent, no style. Q.E.D.

By GARDNER A. DAILEY

If there is a Bay Area Style it is because there are — and always have been — Bay Area people. By their open minds and tolerance, their fostering of the arts in all forms, their varied origins and vocations, they made the atmosphere which encouraged an original, creative spirit at a time, quite early in the West's history, when art was at its lowest ebb. By the early years of this century, this creative spirit had produced such men as Willis Polk, Bernard Maybeck, Louis Christian Mulgardt, Bruce Porter. These men were not restrained by European tradition any more than were their confreres in sculpture, painting and literature. The Beaux Arts influence had no hold on them, and their glass front buildings and corner windows ante-dated those of the so-called "International Style" by many years.

Geographical distance increased their independence

of existing styles and traditions, and this remoteness permitted greater originality than was possible for East Coast architects whose tie with the Old World was the stronger for its greater proximity. Their clients, too, reflected this freedom, preferring architecture and decoration not based on European architectural styles.

The strength of the early architectural work in the Bay Area came partly from the variety of influences which left their impact on the region, and partly from the open minds with which the resulting work was accepted and encouraged by the cultured San Franciscans. The word "vigorous" characterized their work; they shunned the bizarre, the meaningless. What they did was done for a reason, not for novelty.

It was perhaps in keeping with the pioneers' strong individualistic spirit that each designer did his thinking pretty much for himself and there were few imitators. So it was that men like Maybeck, Mulgardt, Polk and the others could work side by side and yet influence each other very little. The same individualistic approach is true among today's architects; despite considerable give-and-take, there is little copying.

The influence of the Orient should not be discounted in this discussion; nor should the climate and topography of the Bay Area itself. Both of these last give the architect a chance — and a reason for so doing — to use a great deal of glass and to design their houses with openness.

There was, is and always will continue to be Bay Area Architecture. Other influences may beat upon it momentarily, change it with petty influences and assail it with the fad of the moment but the culture and good taste, sophistication and the appreciation of restraint of the artists and people of the Bay Region will carry on a Bay Area Style.

By FREDERICK L. LANGHORST

It is doubtful that any conclusion is possible on the question of whether there is a Bay Area Style, perhaps because of the varied meanings implied in the word "style."

That there is anything like a family resemblance, however faint, in the Bay region, might be ascribed to such background influences as 1) the early work of John Galen Howard, Louis Mulgardt, and Willis Polk; 2) favorable climate; 3) availability of beautiful woods, notably redwood; 4) generally liberal attitude of clients; 5) similarity of training and experience of architects; 6) trends in design, based on simple construction methods, and, in some cases, toward modular planning.

I feel that Bay Area architecture actually stops somewhat short of this family resemblance. While most of the architects here have had similar University backgrounds and have been trained in the liberally collaborative offices of the region like those of Wurster, Dailey, Tantau, Clark and Dinwiddie, there is a dissimilarity in allegiance to local influences; there enters also, here as elsewhere in the country, the influence of and allegiance to Frank Lloyd Wright, le Corbusier, Neutra, Gropius, Saarinen and Mendelsohn. The work of followers of such different pioneers of a new architectural principle will stress those qualities which appeal to them from the work of the world leaders. Naturally, climatic advantages, regulations, restrictions, economic limitations of inflation, and last but not least, our variations of design ability, cause Bay Area architecture frequently to offer rather curious modifications — and sometimes combinations of — the characteristics of

Roger Sturtevant Photo

two or more dissident world leaders; these are often rather inferior to the originals. Perhaps this is partly experimental, but it is more likely a groping for something satisfying, in feeling, for the functions to be served.

As for developing a "Style," I would shudder to think of it. As for "style," I hope to get it in each of my commissions one way or another, not by formula, the same for all jobs, but rather something to characterize the individuality of each undertaking. Finally, if anything is producing progress here at any advanced rate, it is the open-minded liberal character of our clients.

By FRANCIS JOSEPH MC CARTHY

Roger Sturtevant Photo

I BELIEVE that no one out here has ever thought of his work in actual terms of whether there is a style, or whether what we do has become a style. We hope that *style* is more important than *styles;* "styles" in the sense of creating a fashion make me think of "product styling," based on hastening obsolescence.

It is true that there is a good deal of similarity in the work done in this area. It would be strange if there were not, as most of the men whose work is under discussion have been fairly closely associated in various offices, and maintain a close, friendly basis of relationship in their own offices. All of us are working with the same type of problem; the economics of getting a job built require simple detailing, and the use of the most readily available material, which in turn implies a similarity of materials and structural systems.

The accusation is made that work in this area is typified by redwood. As an exterior skin material, redwood stands the elements with a minimum of trouble. Furthermore, it is local. Look at the footnote on most national advertisements: "Prices slightly higher west of the Rockies"!

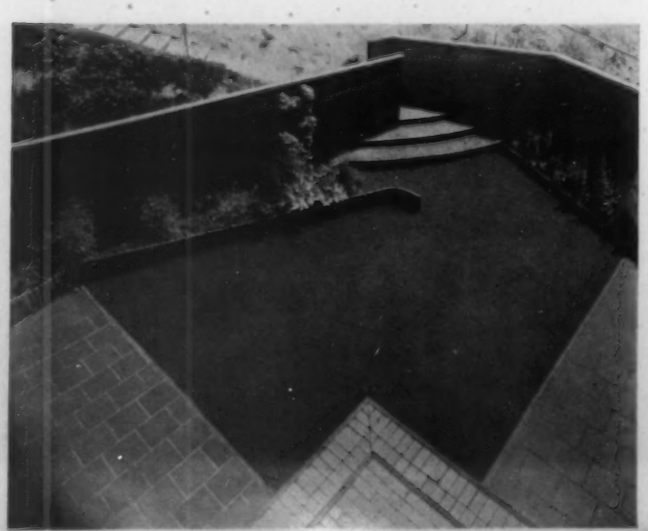
The buildings which are being classified as "Bay Region Style" are for the most part light frame structures, and very few of the architects have had the opportunity to build larger or so-called more important structures. When the architects in question have the opportunity of designing them I wonder if the use of materials typical to these larger buildings will result in a "style" different from those of eastern contemporaries.

By ROBERT ROYSTON

THE word "style," as applied to architectural form in the Bay Area, is limiting and categorical. Actually, the common elements of expression though perhaps evident in a few houses and a few gardens, are certainly not to be found in our public buildings. They are mainly visible in the projected unity of purpose of a few individuals, in all the professions. This unity is based on the realization of a common objective — improvement of working and living environment, private and public, for the majority of the people.

The most important aspect of this unity of purpose is, I think, the spirit of collaboration and the unusually free interchange of ideas to be found here, not only among members of each professional group, but between individuals in all groups. Perhaps the best examples of this collaboration and interchange of thought were the now defunct Farm Security Administration and Federal Public Housing Authority whose design staffs included men from all the allied professions, placed side by side to work out total site solutions for multi-family dwellings. (Unfortunately, much of the latest and best work in this field died on the drafting boards.) Their projected solutions, both in total space organization and building techniques, might have been an actual building renaissance had these agencies continued. Discontinuance of the agencies did not, however, kill the impetus gained in architectural design and in site planning; the energy and knowledge was turned thereupon to individual houses, gardens, public schools and more thoughtful works within the limits of private capital.

M. Halberstadt Photo



Where an individual dwelling is recognized as being advanced in solution, it is largely the work of professional collaboration, in varying degrees, by architects, landscape architects, engineers and planners. Since many of these professionals are also professors at the University, the collaborative approach and the broader concept of planning are passed on to and, to an extent, participated in by, their students, the professionals of the future.

It would be a superficial and detrimental rationalization to call this effort a "style." Perhaps someday a few of the aims and efforts of the professionals (*space organizers* well versed in esthetics, function, and social contribution) will be realized. Perhaps then the people themselves, expressive of the environment, might be categorized as the basis for the word "style."

Randal Partridge Photo

By FRANCIS VIOLICH

THE report that a "Bay Area Style" in architecture has developed is surprising to me; it implies a disappointing evaluation of the scope of our architectural objectives in the Bay Area.

Our interpretation of the word Architecture becomes as broad as the situation may permit. Certainly, if it is to have any meaning at all, it must include a wide variety of building types other than residences; we must consider the space around them, the access to them and their relation to the whole urban organization.

"Architectural Style" implies unmistakably regional characteristics as found in certain areas of the world. Centuries of development were necessary to establish these styles as the dominant architectural element in the urban geography before the copying of them could begin.

With this interpreting in mind let us look for architectural style in the Bay Region. Is it the so-called "Bay Area Style" that is the predominant architectural style of the houses of the area? Only in part. San Francisco is more accurately characterized architecturally by the Sunset's endless grid of row-houses with uncompromising, identical rears and cake-frosted fronts: the Mission's Victorian flats; the Marina's version of Mediterranean; zig-zag skylines where windowless dwellings face world-famous views. Even the newest construction maintains this old tradition. The East Bay's hodge-podge is no better.

Thinking in terms of this mixture of building types and copied styles, and the few honest expressions of local house-building ideas, we who are planning the Bay Region's architectural present and future, believe that we are a long way from a "Bay Region Style." Not until we achieve for people of all incomes, in all parts of the Bay Area, the standards of truly good living conditions will the character of our work be ready to be identified: communities with well-spaced apartments, walk-up flats with views, row-houses planned for outdoor living and good family life, and some homes on single plots. This kind of architecture will be the product of inter-professional teams. Until this kind of reconstruction takes place and the present Bay Region character is replaced by a truly "Bay Area Style" uncompromisingly dominating our landscape we cannot permit our scant, though good, examples of architecture to be laid down as the Bay Area Style.

By EDWARD WILLIAMS

THERE are architects in the Bay Area whose work has the quality of "style" in the organic sense. Similarities in some of the work of a few architects result mainly from the use of similar materials to solve similar problems of living for a clientele with more or less similar building funds. Tribute is due our climate, too. Climate, clients, site, and materials directly affect design — but they do not determine style. Though proud of the work of local architects, we know that their work does not constitute a Bay Region Style. For every good modern house built, a thousand makeshifts go up.

The general pattern of building here — only slightly different from that elsewhere — is such a confused conglomerate of materials and ideas and so little of it has been touched by architects that it could really be called style-less.

There is progress which will continue as more architects and allied professionals seriously concern themselves with the fundamental problems of meeting the immediate and long-range needs of the mass of the people. We have the potential skills and techniques for solving these problems and as our understanding of society grows, the character of our work will develop.

"Are we too close to the Bay Area to be objective, too aware of the thousands of 'jerry-builts' spreading out over the mud flats, of the extent of our slums, the inadequacy of our public and private housing, of our commercial, industrial and public architecture? Is it too much to ask that the coiners of the fine phrases wait until we are doing whole communities (Carmel, lower right) in which the best of our fine materials, modern planning and building techniques are utilized in producing structures which are clear, organic, progressive and democratic?"

. . . Edward Williams

Morley Baer Photo

A HOUSE WITH TWO WINGS AND RARE PRIVACY

Residence of Mr. and Mrs. Marshall Hale, Jr., Burlingame, Calif.

Clarence W. W. Mayhew, Architect

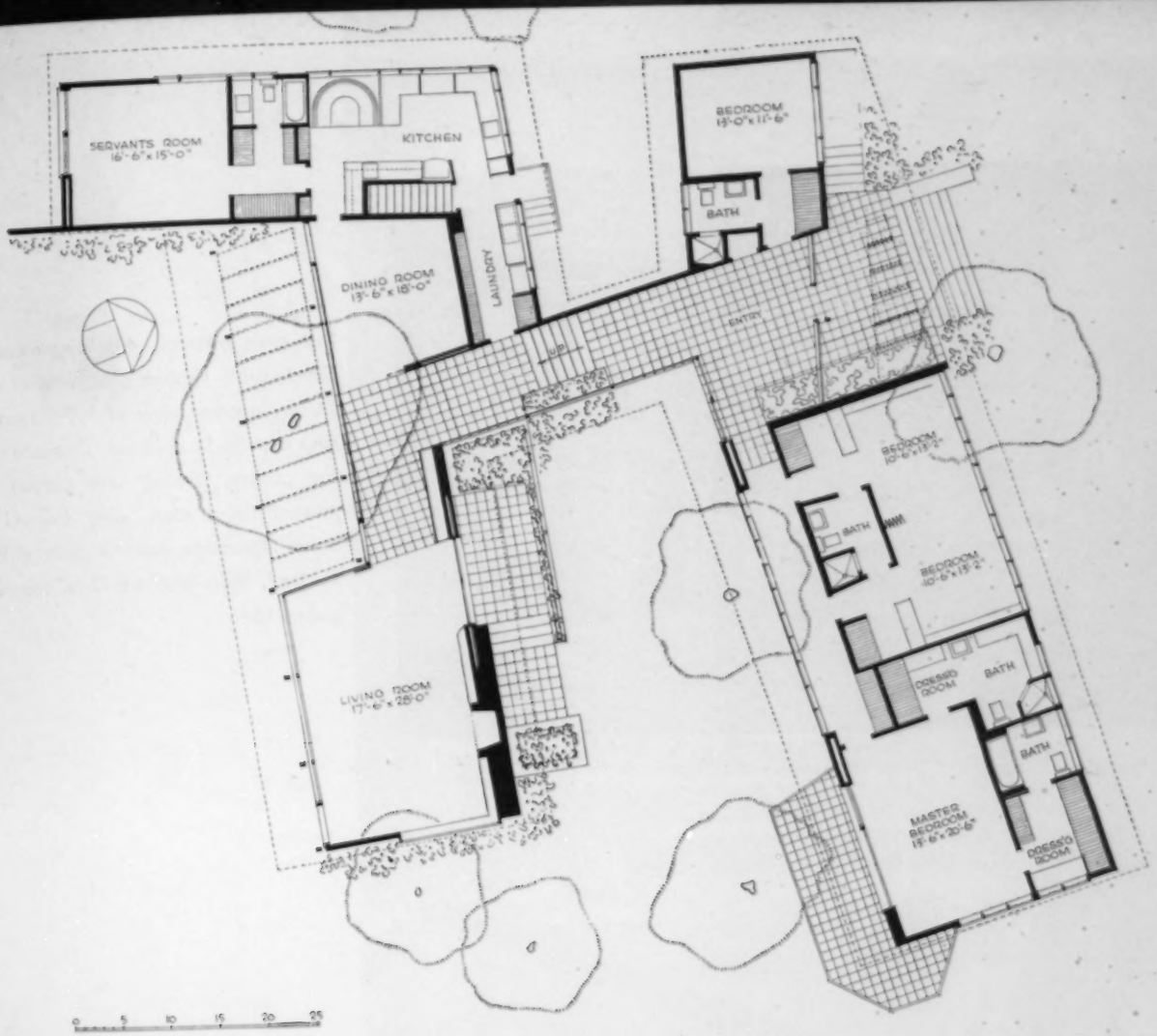
COMPLETE separation of all the varied activities of family living marks this unusual, distinguished California house, designed for a department store executive, his wife and three children. The house is located in a large terraced garden, and follows the natural slope of the land. It is divided, as the plan on page 101 shows, into two wings, one containing the living and dining rooms, servants' room and kitchen, the other containing the bedrooms. Each wing, however, is subdivided by the entrance hall and gallery, so that the effect is really one of four wings, with each "department" of the house completely segregated. This arrangement, furthermore, provides two secluded courts, one for the family and the other, below the kitchen and laundry, forming a screened service yard. The servants' room, large enough to be a combination bed- and sitting room for a couple, turns its back on the rest of the house, and the guest room, with its own bath, is likewise secluded.

Exterior finish of the house is light buff cement stucco accented by the burnt orange interior seen frequently through the large glass areas of the walls. Heating is by forced warm air, with filters and humidity control. Three gas furnaces are required: one for the bedroom wing and guest room, one for the living room, dining room and kitchen, and a third for the servants' wing. Lighting throughout is indirect and flush.

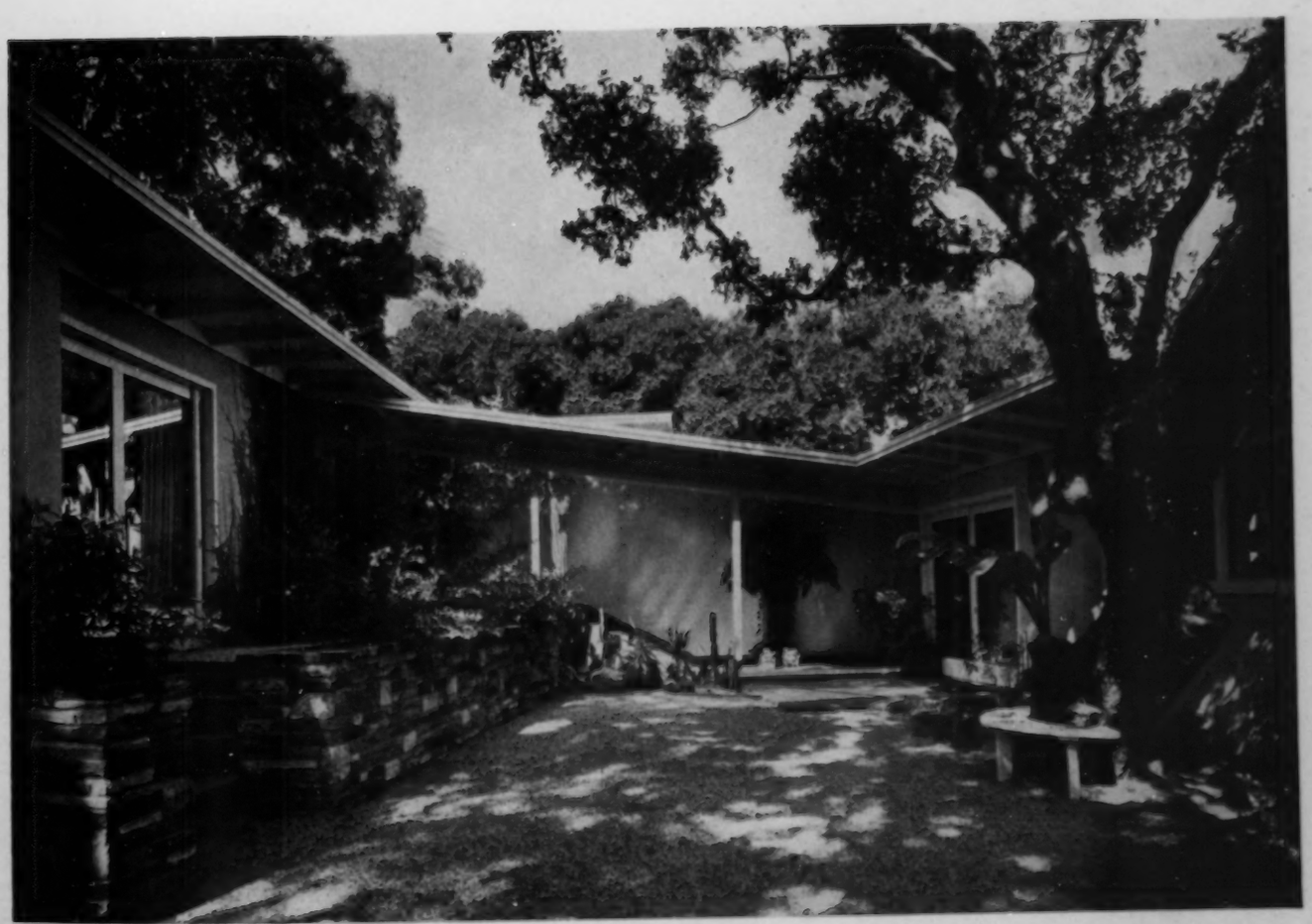
Roger Sturtevant Photos

The bedroom wing stretches across the front of the house, but the master bedroom (right in photo above and extreme left on opposite page) faces the garden court separating the two wings, and has its own balcony. Room beneath the balcony is combination tool room and hot house. Veneer walls in living room (below) are bleached Philippine mahogany

A magnificent oak tree, shown in both photos on this page and also on pages 102 and 104, grows up through roof trelliage outside the glass walls of living and dining rooms, and is visible from the main entrance through the gallery. Above: the living room looking across the gallery toward dining room. Below: the living room terrace is shielded by wall of servants' wing at left. Opposite page: the connecting gallery, seen from garden court; living room is at left, children's bedrooms are at right



Roger Sturtevant Photos



Roger Sturtevant Photos

Left: main entrance, with living room windows visible through glass wall of entry. Below: another view of living room terrace and the fine old oak. Opposite page: the gallery, looking past garden court toward living room wing (above) and down the steps toward main entrance (below); floors here are 12-in. square red quarry tile

The master bedroom, above and opposite, is generously proportioned, has two baths and two dressing rooms. Below: a corner of the dining room, looking across gallery to living room. Floors are overall-carpeted except in kitchen, laundry and bathrooms, where linoleum is used. Interior walls are hard plaster, canvased and painted. Lighting throughout is indirect and flush

Because the house follows the natural slope of the site, the master bedroom is virtually at second floor level and its private balcony (see also page 99) is hidden in the branches of the trees. The kitchen, below, has a comfortable dining corner for the servants, and, like most rooms in the house, has two exposures. Window at right overlooks service court

Roger Sturtevant Photos

by Ezra Stoller: Pictor

"MANHATTAN HOUSE" REPLACES OLD CARBARNS

Mayer & Whittlesey — Skidmore, Owings & Merrill, Associated Architects

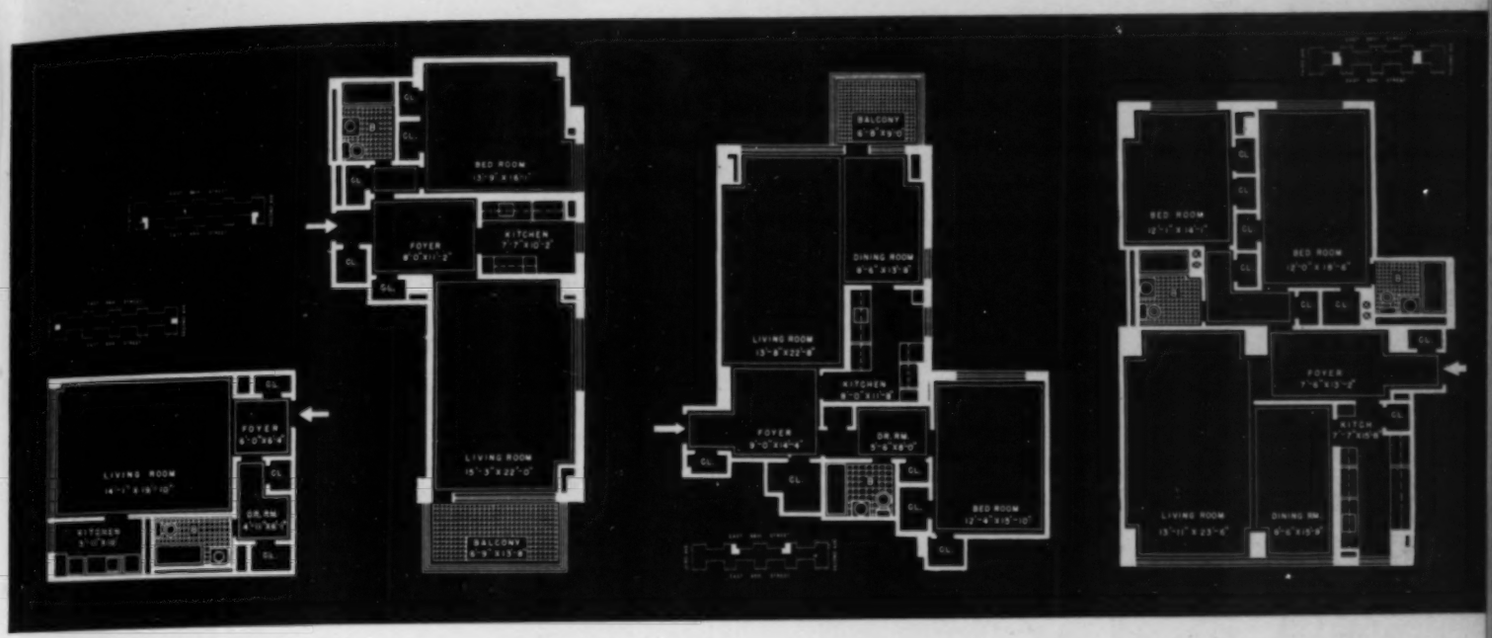
THE New York Life Insurance Company has announced starting construction of a $10,000,000 apartment house project, "Manhattan House" on the upper East Side, occupying the entire block from 65th to 66th Streets, and from Second to Third Avenues, an area approximately 200 ft. by 610 ft. Formerly occupied by the old Third Avenue carbarns, the plot was purchased several years ago for $1,600,000. The building, which will be owned and managed by the Company will provide 582 apartments totaling 2486 rooms.

Apartments will range in size from two to seven rooms, with three, four and five room units in the great majority. Rents have not been finally determined, but probably will average between $55 and $60 per room per month. For the three room units the annual rent, including gas and electricity, is expected to range from about $1600 to $2500; for four rooms from $2000 to $3400; for five rooms from $3000 to $3900.

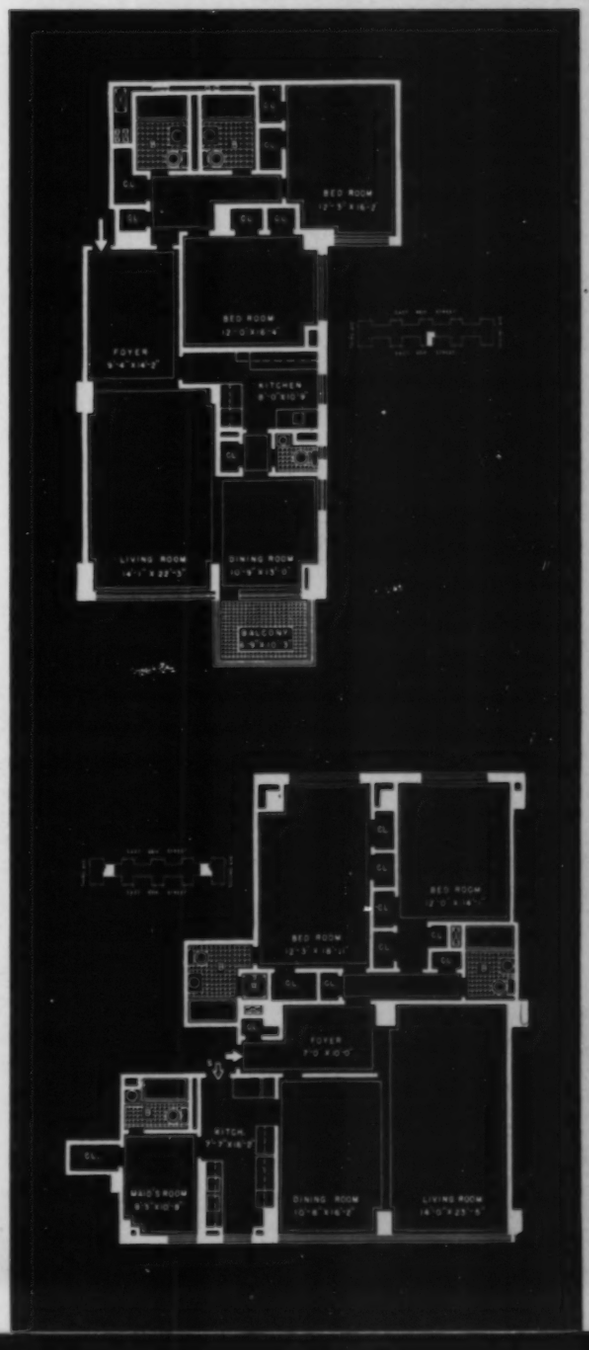
Reversing the customary practice of locating building units along street lines, with interior garden space, the plans call for a single large building which will run full length through the center of the block between Second and Third Avenues, with wide landscaped areas on both sides. This design was adopted to assure maximum light and air for each apartment, as well as maximum distance from any surrounding structures.

The plan is notable in the recognition given to the problem of traffic. The New York Life has conveyed to the City a 40-ft. strip along the southerly side of 66th Street in order to widen the street from 60 to 100 ft. This will permit a through route for through eastbound traffic, with a secondary road for local traffic off which there will be two covered entrance ways to the apartment building. On 65th Street there will be two off-street delivery areas with large basement receiving rooms. Thus all passenger traffic will enter and leave on the north side at the street level, while all service traffic will be handled on the south side at a lower level. All entrances to the building on both streets will be covered to minimize noise.

Another outstanding feature of the plans is that the entire development "carries out on a large scale, in a big city, an indoor-outdoor synthesis hitherto found mostly in modern country homes." For example, the long central lobby has glass walls permitting a clear view of the gardens on both sides of the building. In summer the sliding panels can be opened so the lobby and gardens become one space. Much the same effect



Opposite page, photographs of the model showing glazed balconies. Plans show typical apartments designed for maximum light, air and privacy. Small diagrams indicate locations of apartments in the block-long structure



will be achieved in most of the apartments above the fifth floor where large balconies will open off the end windows of living or dining rooms. These windows will extend the full width of the rooms. In every room having a balcony, there will be a window as well to assure light from another exposure.

The building will be of reinforced concrete so designed as to provide flat ceilings without beam breaks in all main rooms. The structure will be finished in a light self-washing, glazed brick which will reflect a maximum amount of sunlight to the benefit of the surrounding area. Windows will be flush with the outside wall to eliminate staining caused by dripping from dirty window sills.

A majority of the units have a southerly exposure, while 95 per cent have through or cross ventilation. On a typical floor, 18 out of 32 apartments will have a south exposure and eight both a north and south exposure. Twenty of the apartments will have corner exposures.

A garage to accommodate approximately 175 cars will be built under the garden on the 65th Street side and will be readily accessible to tenants from the lobby.

(*Continued on page 206*)

HOSPITALS

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NO. 149

By Carl A. Erikson, F.A.I.A.

Schmidt, Garden & Erikson, Chicago

TOMORROW'S HOSPITALS

TO SPECULATE on the needs of the hospitals of tomorrow is a necessary part of the architect's function in planning the hospitals of today. But to limit this planning for the hospital's future to a few dotted lines on the site plan, indicating a possible building, begs the whole problem. For when the architect begins to plan the building that is to fill in those dotted lines made 10, 20 or 30 years earlier, he finds that the hospital is a complex organism — living, growing and changing. His earlier building, even though its physical envelope remains the same, has changed in unexpected ways to meet the ever new needs of the very vital organization which is the hospital that the building encloses.

As the architect ponders the many parts of the initial building that must be expanded as it grows in service to its community, he wishes that his initial building had the qualities of an acorn, for "Mighty oaks from little acorns grow." The kind of oak produced from the acorn depends largely on the space given it to grow in — if in the open, a low, spreading ornamental tree; if in the forest a timber tree with a long trunk and a few branches. In either case, as the tree grows, every part of it develops — roots, trunk, branches and leaves. Hospitals, too, grow; but neither Mother Nature nor the architect has yet found a way to let the hospital grow as does the oak, all parts in proportion as the needs develop.

History Helps

No one can now foretell what the future will require of the hospital in the next 25 or 50 years. But a look backwards may at least give us a bearing to determine whence we came. The hospital of today was born about 50 years ago — the backward twin of medicine. It has, ever since, been trying to keep pace with its brilliant brother. Before today's hospitals could even be thought of, the men of medicine first had to produce and test anesthesia, discover and control bacteria, and unfold the wonders of X-ray. And it is precisely these tools that are responsible for the rapid growth of hospitals. As we look backward, it is quite obvious, too, that it is in these areas that the hospital has made its greatest growth, and, hence, it is in the medical service areas, which house these and similar tools, that the greatest maladjustments are found.

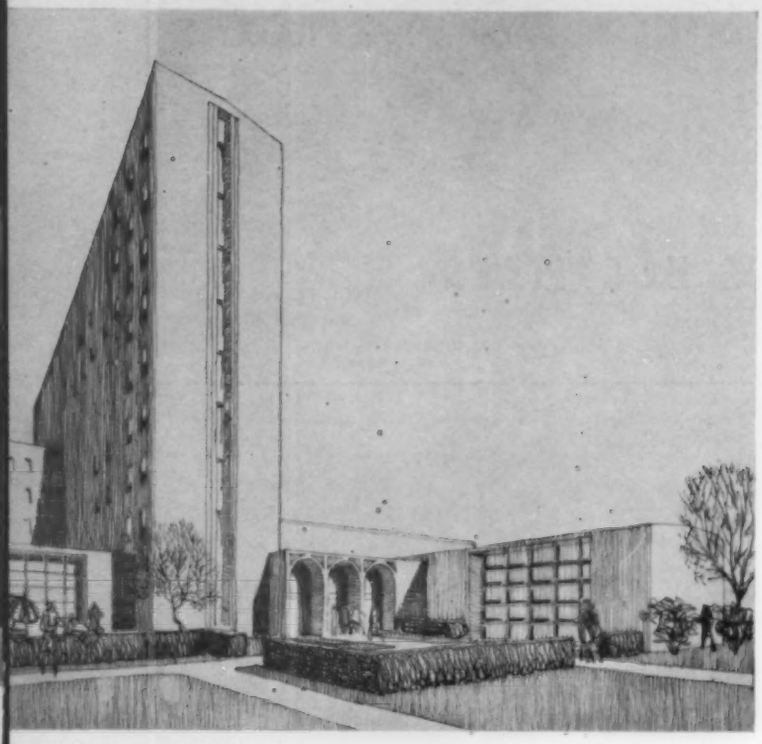
Accompanied, as this development was, by reduction in the size of the family, the smaller home unit, the elimination of casual and neighborly help, the change from rural to urban life and the increasing age of its patients, more and more patients' beds were required. Insurance plans enabled the sick to take advantage of the benefits of the hospital, and the hospitals to extend to them the facilities not to be had elsewhere. The result has been the overcrowding that has brought most hospitals to bursting at the seams.

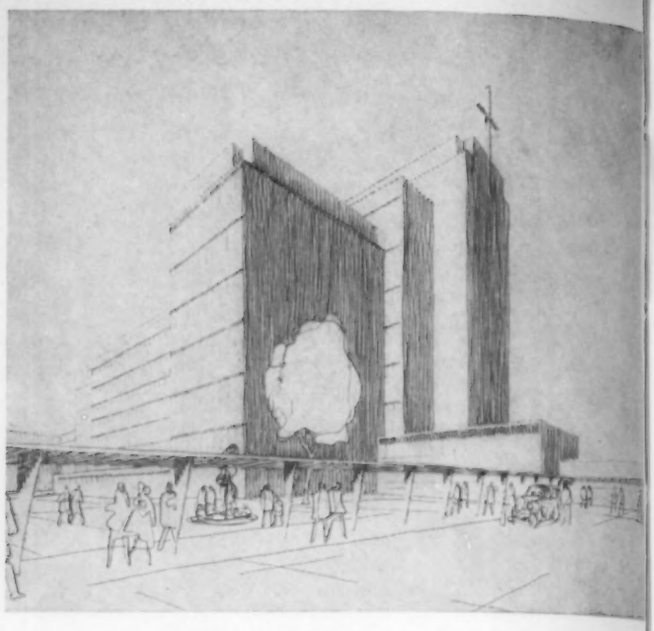
The growth in patient capacity and in medical service areas — X-ray, laboratory, physiotherapy, etc. — is very noticeable. Less marked, but still important, have been the effects on the service and administrative areas. The hospital stepped up from little business, with its bookkeeping in somebody's hat, to big business, with all its necessary records and controls. During these years, the number of days of patients' stay in the hospital was cut very markedly, but little heed was paid to the effect of this more rapid turnover on admitting procedures, business records, laboratory, X-ray needs, etc. More patients required more kitchen, laundry, storeroom, office and boiler capacity.

Boom in Hospital Construction

So the hospitals, like Alice in Wonderland, have during several generations "run just as hard as they could to stay where they were." If we read the signs of the times correctly, they will have to run even harder in the next few decades. Medicine, whose handmaiden the hospital is, seems to be stepping up both its art and its science at a tremendous pace. This keeps the hospitals breathless and fundless, even though they lag well behind the men of medicine. In the past several years we have witnessed the advent of penicillin and many other similar benefits to mankind. We have seen tuberculosis changed from milk, eggs and fresh air to surgery. We have watched the concentrated attacks on tubercu-

Goodyear News Service Photo





". . . there is nothing quite like the problem of planning for the hospital's future to be found in today's architectural practice . . . none is so dependent on proper relationship of parts to one another, none so subject to ever-changing needs"

losis and their amazing possibilities; we look forward hopefully to similar mass attacks on cancer and heart disease, just as we have seen the virtual elimination of the childhood scourges of scarlet fever, diphtheria, etc. In this atomic day we learn of one of its offsprings, the isotopes, whose possibilities await exploration. What effect will they have on our hospitals in bed capacity, equipment and techniques?

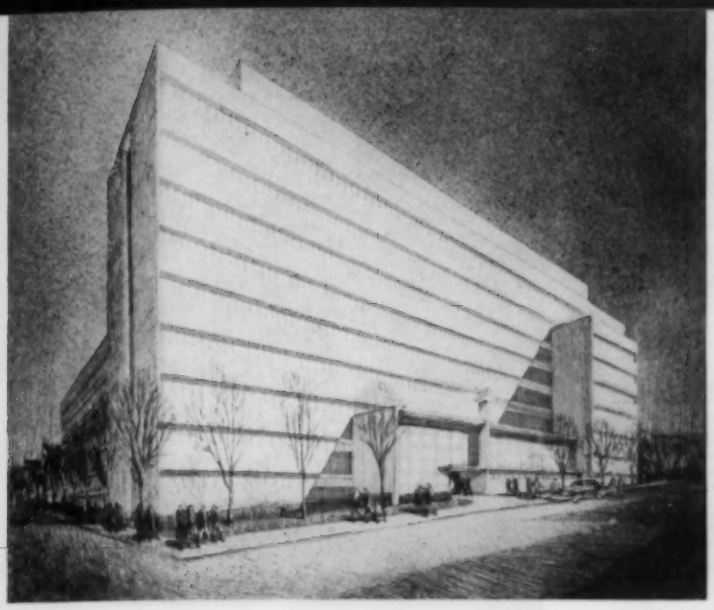
Keeping pace with the medical profession is a task of the first magnitude, but that is only part of the race the hospital runs. The hospitals have seen the government begin the subsidy of construction of hospitals. Will it continue and expand that program? Will it go further by subsidizing the care of the indigent and the medically indigent? It seems certain that, if everyone can have hospital care when, as and if he needs it, then the hospitals of this country will prove wholly inadequate. Certainly, then, the current boom in hospital buildings will seem like mere child's play.

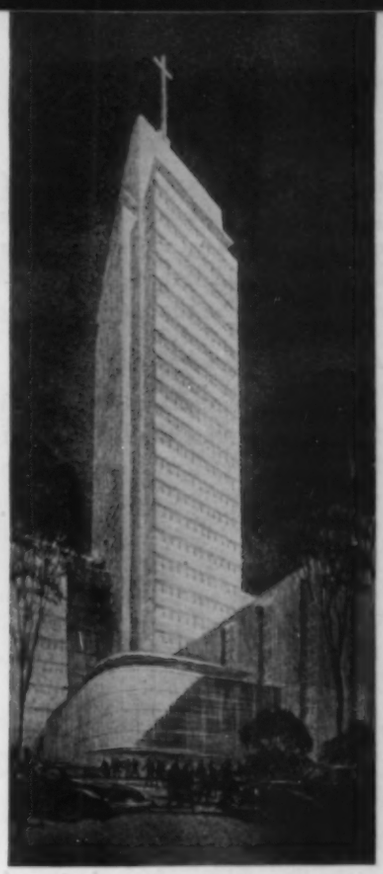
Expansion Yet to Come

The advancing age of people already has introduced very serious problems — the care of the chronically ill, not generally accepted in the general hospital and for whom there are few beds in well-run institutions. The care of the chronics, like the quality of mercy, falls equally in all classes. The lack of nurses to care for them in the home, even when there are funds available, precludes that possibility; the small size of the housing units further limits it. But much can be done to restore these chronically ill to useful purposes if they can be given proper medical care; and that means, generally, as a part of a general hospital where the benefits of the active clinicians, laboratory workers, etc., may be focused upon their problems. If we are to open up our hospitals to the chronically ill — and we must — then further large additions in hospital beds will be needed.

Psychiatry has been the stepchild of modern medicine almost since modern medicine began. It is a difficult field, and, in spite of valiant efforts of a few, the accepted solution is to stack these cases away in warehouses, called, by poetic license, hospitals or asylums or sanatoria; "Stack 'em up and then forget 'em" seems to have been the policy. Not deliberately so intended, but, practically, that is the way it has worked out. If the increase of the non-productive population in these "warehouses" continues to increase in the future as it has in the past, then this millstone around the necks of the mentally healthy may become unbearable. There has been comparatively little research in psychiatry, but some steps have been taken and the outlook is hopeful that this increase may be cut down, if not reversed. One of the steps is care of early psychosis in the general hospitals, and it looks as though that would come to pass. The result again is a larger hospital, and a more complex one.

Thus, the architect who seriously gives consideration to the future needs of the hospital that he is planning faces some great difficulties in determining what he is planning for. Unfortunately, he can be sure that the acorn he plants will not grow into an orderly oak, expanding roots, trunks and leaves as it increases in size. Rather it will grow by fits and starts and all parts will not be expanded, as new needs are to be met in new buildings.





Four recent hospital buildings designed by Schmidt, Garden & Erikson, Architects. From left to right across pages: Nurses' Home, Hospital of the University of Pennsylvania; St. Elizabeth Hospital, Dayton, Ohio; St. Joseph's Hospital Lancaster, Pa.; Mercy Hospital, Chicago (see also model photograph, next page)

Efficiency vs. Tradition

The hospital will continue to be dependent on a great deal of personal service, now proving to be very expensive and so difficult to reduce in quantity or increase in efficiency. It was a tradition in the hospital that the employee should be underpaid, but the last several years have pretty well cracked this tradition. Administrators are now searching eagerly for ways of reducing operating costs, and many of those ways are affected by the planning. The hospital, too, is a conservative institution. Many hesitate to accept new concepts of arrangement that would reduce the personal service time. There is more eager study but some hesitation about such conveniences as tube systems, mechanized supply carriers and similar devices to be found in every large industry. On the medical side there is likewise hesitancy about accepting new and more efficient methods, for the men of medicine have a guinea pig complex — if it hasn't been tried out on 1000 guinea pigs, they hesitate to use it in their hospitals. But as hospitals become bigger and bigger business, the importance of all kinds of labor-saving devices in themselves, and in planning for speedy and economical use of facilities, becomes a must.

The hospital's complex mechanism is operated by numerous personnel whose time is paid for. At all levels, from the dishwasher to the chief of the medical staff, they spend many a weary lifetime waiting for elevators that aren't there. The nursing service is made more complicated and unpleasant by lack of bedpan service adjoining the patient's bed. The early ambulation of surgical patients, now almost a routine in hospitals, would relieve much of this unpleasant and costly task if there were toilets near the patient's bedroom. After a detailed study of the collection and distribution of laundry in the hospital, it seems laughable, if it weren't so expensive; but then, as so often happens, laughter changes to tears.

Among architects, the current fashion is to oversimplify the hospital plan. Because sunshine is good in the patient's room, all patients should face the south, and the nursing unit stretches out, as in a number of cases, for 250 ft. This is said to be the great contribution of the "modern" architect to hospital planning, ignoring the fact that this theory was propounded over 40 years ago and frozen into German laws then. This oversimplification of nursing unit planning ignores entirely the cost of bedside care — most of which would be spent by the nurses galloping down these long chutes. That it ignores many other elements of planning, such as view and economy of construction, is obvious. The hospital that does not recognize this cost element is obviously badly planned.

If we are to judge the future by the past — and I see many reasons for assuming that it will follow that pattern — the hospital will grow faster in its medical service areas (laboratory, X-ray, physiotherapy, surgery, etc.) than in beds. The impact of growth in beds or in services, both of which are the reasons for the existence of the hospital, will not be so quickly felt in the administrative or housekeeping services, but sooner or later all of these will feel the impact of growth. Therefore, it behooves the architect who plans for the future to plan his hospital so that all the departments of the

hospital can be expanded. Some of them are easy to expand, such as offices. Some of them are very difficult to expand and may require relocation, such as the medical services and the intermediate areas of the housekeeping services, such as the kitchen, laundry, etc.

Advancing Technology

The architect planning for the future must recognize, furthermore, that the hospitals of the past or present have not reflected all these developments that should be recognized in planning for the future, and also have failed to take advantage of technological improvements in construction. By these I do not mean merely those new developments in construction materials and techniques, whether pretty well proven or still hopeful dreams, but those which have been so generally accepted in other fields.

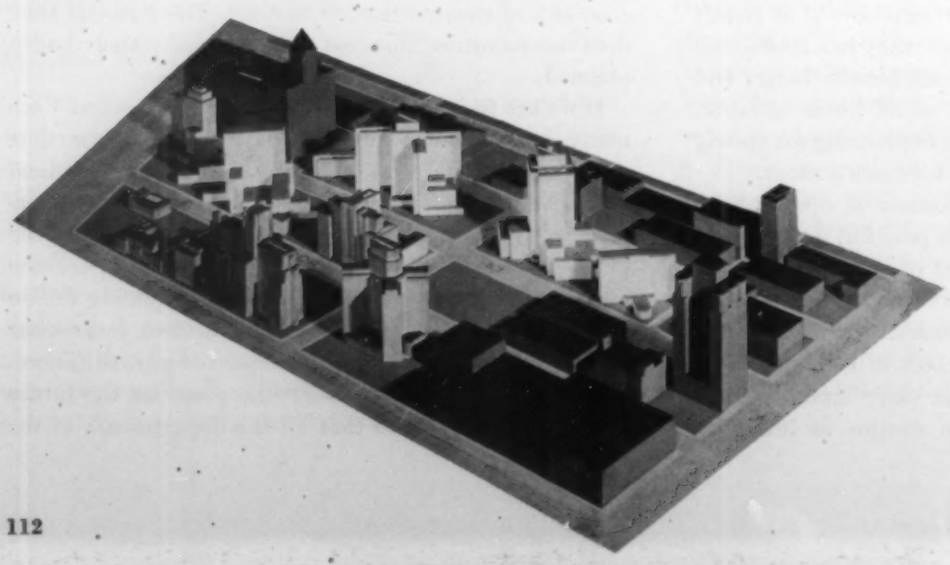
The possibilities which come from air conditioning, lighting and the development of the germicidal lamp still are largely ignored. They permit a "fatter" building and avoid the necessity for compromising between a truly efficient departmental plan and the typical patients' room floor plan, which must, of course, have outside light for all patients' rooms. Taking advantage of this development alone, frees the planning of the hospital tremendously. It has taken about 25 years for air conditioning to be generally accepted for the operating department. The germicidal lamp, which could be used to sterilize inside areas more effectively than does any amount of sunshine through windows, is still considered of doubtful value by many. The anachronism of placing windows in a room such as the fluoroscopic room of the X-ray department, that must be kept darkened at all times when it is being used for that purpose, does not occur to many. Boards of directors, administrators and doctors are all hesitant about some of these developments.

Some increase the cost of the building, but some, while increasing the cost also decrease cost by permitting a more nearly square building for some parts of the hospital than is possible with the conventional plan. And some of them, because of the greater efficiency possible, would justify considerable increase in cost merely on economies in operation and improved efficiency in care of the patient.

Main entrance detail, Illinois Masonic Hospital, Chicago, Ill. Schmidt, Garden & Erikson, Architects (Hedrich-Blessing photo)

There is nothing quite like the problem of planning for the hospital's future to be found in today's architectural practice. To be sure, a few other types are enlarged from time to time, but none of them requires the closely knit service of the hospital, none is so dependent on proper relationship of parts to one another, none so subject to ever-changing and unpredictable needs.

The architect might decide, as he reviews the many variables to be taken into account in planning for the future, that "it just can't be done" and forget it. That is the easy way; the few who seriously study the question will, if they do not answer it, point the way to better and more flexible hospitals of the future. And it will be through such studies that the architect will aid in producing better hospital service now and in the future.



Model of Northwestern University Medical Center, Chicago. The larger building (left center) is the huge Tumor Hospital for the Veterans' Administration; the tall one (right center) is the new Mercy Hospital, both designed by Schmidt, Garden & Erikson, Architects

Chicago Architectural Photographing Co.

HOSPITAL PLANNING—STUDY IN INGENUITY

Early Hospitals in Federally Aided Program Show Wide Range of Ideas

MORE than three hundred hospitals, aided by federal funds have been started since the Hill-Burton Act was passed by Congress in August, 1946. Hundreds more are now in the planning stage, with still more to come. First priorities went to rural hospitals, to speed realization of one of the principal aims of the program — to carry good hospital and health service to areas needing it the most.

From the standpoint of planning, the earlier hospitals are especially noteworthy, for several reasons. First, a great many of them have been done by architects who are not "hospital specialists," many of whom were planning their first hospitals. Second, even though a hospital is a highly intricate planning assignment, the essential ingenuity of architects is readable in the plans. As Marshall Shaffer, chief architect, Division of Hospital Facilities, U. S. Public Health Service, has pointed out: they did not "crib cold" the "Elements"* or the "Type Plans" [1] issued by the Division for the guidance of architects doing hospitals for the program. Third, the earlier hospital plans show a number of compromises, necessary for reasons of economy. On succeeding pages a few of the first plans are analyzed, to show where compromises can best be made, and where it is necessary to insist on certain accepted standards, so that patients may be assured of safety and good care, and so that it will be possible for the hospital staff to work with reasonable effectiveness and efficiency.

In the interests of the patient's safety, it is necessary, of course, to take every precaution against cross infection. It is concern about cross infection that explains the insistence on a delivery room separate from the operating room. Though not all authorities agree, it is the feeling that separation of these two important facilities is a common-sense precaution of some importance. It is best, of course, to keep delivery and operating suites separated by some distance, so that different personnel will be necessary. Where economy forces the two suites to be adjacent, it is still possible to arrange corridors and partitions to make it all but impossible for a nurse, say, to step quickly from one room to the other, and in her hurry carry infection between cases.

Concern about cross infection also dictates the separation of emergency room and operating suite. The so-called "dirty" cases are to be expected in the emergency department, and should not be allowed in the surgery. While naturally the hospital staff will be well trained in matters of infection, the architect can do much to prevent the forgetfulness that might come in hurried emergencies.

Cross infection is also the great fear in the nursery rooms. This is also a controversial area, for the nursery puts a heavy load on the nursing staff and efficiency is not to be taken lightly. Nevertheless, separation and dispersion does much to lower the risks, and adequate space and adequate separation of bassinet cubicles are desirable.

Plans are also studied carefully as to space and facilities for nursing personnel. Hospital activities and techniques have continually added to the strain on the hospital staff, as have the shortages of trained personnel. Nurses must have room and equipment to work properly, and the architect's responsibility is to see that she is not handicapped by cramped work rooms and lack of proper facilities for keeping up with medical standards.

These are the main areas for holding to principles and standards of planning, so that a hospital does not become obsolete before it can be dedicated. In many other areas, it is possible to compromise with the best in order to keep down costs.

Oddly enough it has been observed that architects seem to follow the type plans most closely in the layout of nursing units and in the size of bed rooms, and to seek cheaper solutions in the more technical departments. And yet, of course, the bed room space is the cheapest space, so it is logical to look for savings in the more expensive areas.

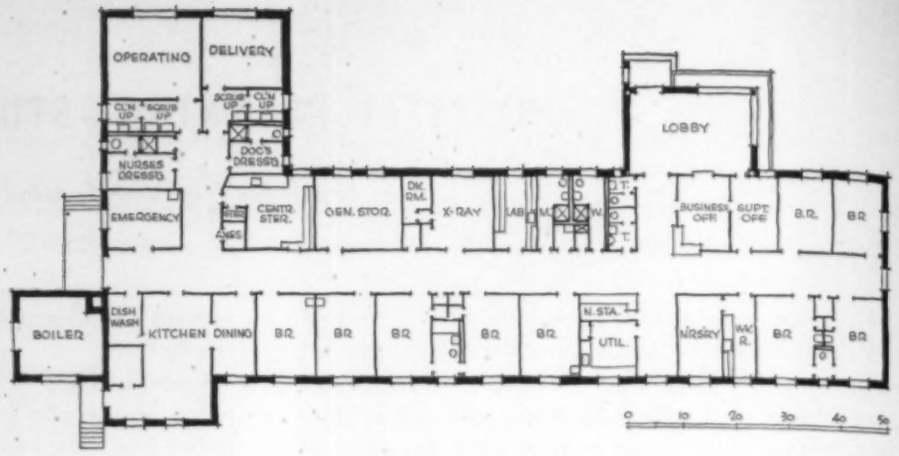
Along this line, a tendency has been observed to cut the width of corridors; many plans show them as narrow as seven feet. This too is cheap space, and a foot or two more in corridor width will permit much easier operation in the daily hurry of a hospital.

Early plans show considerable ingenuity in provisions for expansion. The architects have taken full advantage of the principles of free and open planning, to point wings out in all directions, to turn little stub wings to provide cul-de-sac locations for operating and delivery suites without blocking expansion plans, and to provide that dispersion of departments that seems to be the mark of good hospital planning.

In the small hospitals there is some neat juggling to be done in this type of planning, in the matter of control. The small institutions frequently must insist on a single nurses' control point, for night operation. Perhaps a single nurse will be on duty at night, and she must not have to preside at two stations at the same time. In general, then, the small hospital plan must come to a focus in the center.

More specific comments follow in the individual analysis of five early hospitals in the Program.

* "Elements of the General Hospital," ARCHITECTURAL RECORD, June, 1946.
1. "Plans of the General Hospitals for the Coordinated Hospital System," ARCHITECTURAL RECORD, Jan., 1948.



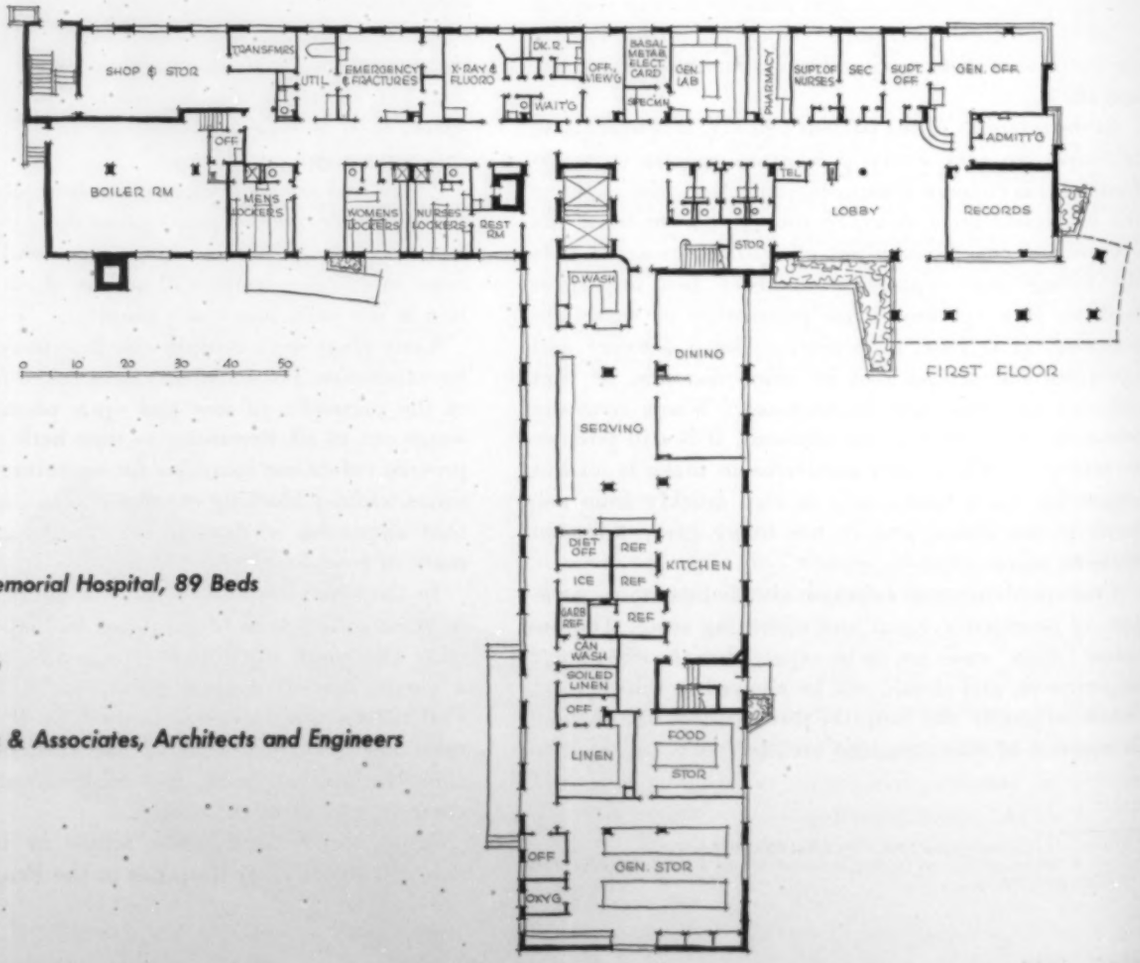
1. Goliad County Hospital, 18 Beds

Goliad, Texas

J. G. Smyth, Jr., Architect

WHILE so small a hospital as this is not generally advocated, this one provides medical care for an area where population is sparse and finances limited. This plan is carefully studied, and seems to meet all of the requirements with a minimum of objectionable features. Since it is so small, this hospital does not follow any of the P.H.S. elements or schematics, but it does follow their principles, with the expected reduction in size and scope. The arrangement of departments and elements seems good, and no serious traffic conditions appear. Also there is no compromise with good aseptic techniques. For example, delivery and operating rooms adjoin, but there is a good separation, leaving no physical reason for cross infection. There is a separate emergency room, close to the ambulance entrance.

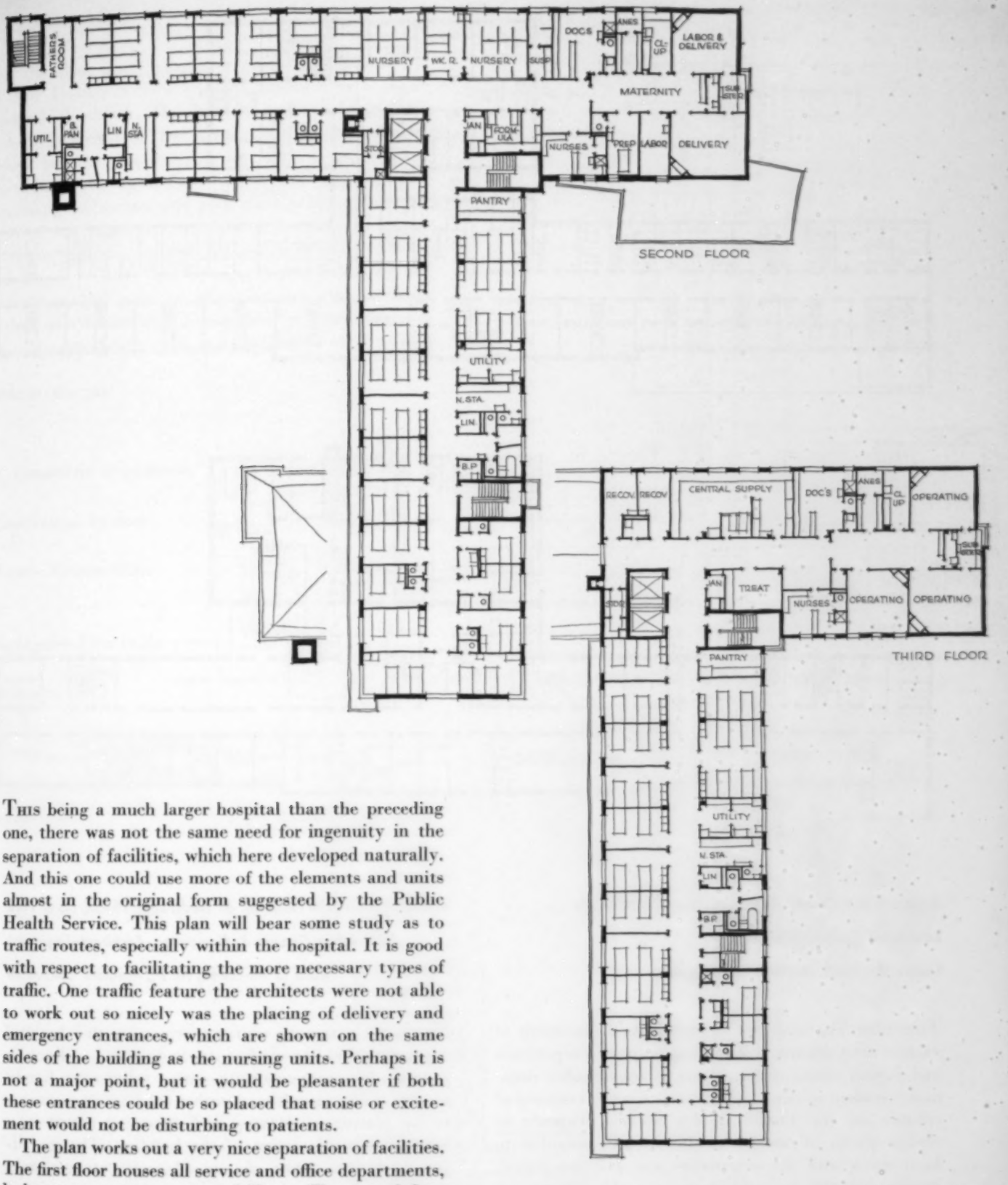
Perhaps, in so small a hospital, it is splitting hairs to separate Medical-Surgical and Obstetric beds, as has been done here. It is recommended practice, true, for hospitals in which it can be assumed that different nursing staffs will be available for each. Here it seems to spread out the nursing care area more than might be necessary.



2. Caldwell Memorial Hospital, 89 Beds

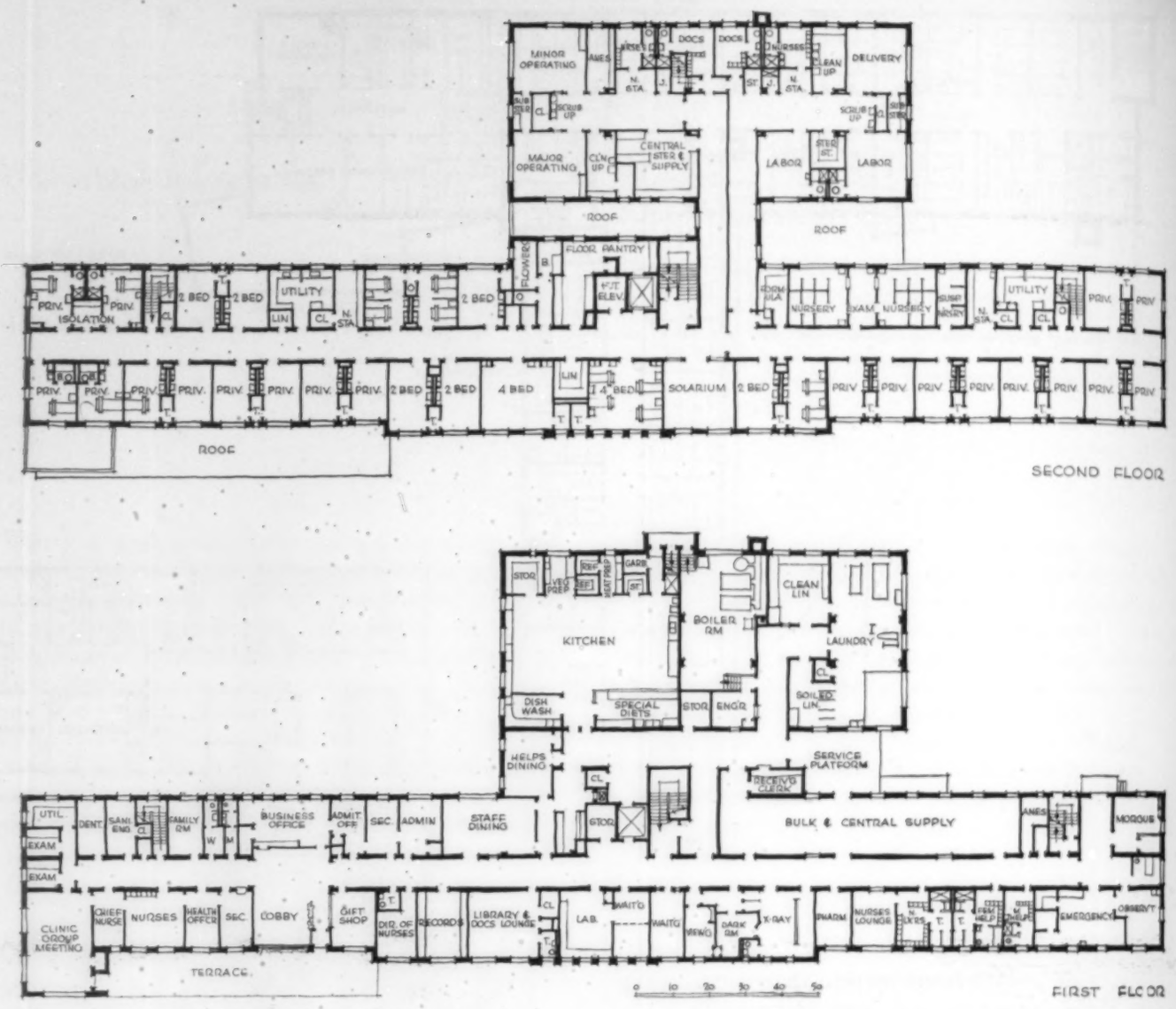
Caldwell, Idaho

Victor N. Jones & Associates, Architects and Engineers



THIS being a much larger hospital than the preceding one, there was not the same need for ingenuity in the separation of facilities, which here developed naturally. And this one could use more of the elements and units almost in the original form suggested by the Public Health Service. This plan will bear some study as to traffic routes, especially within the hospital. It is good with respect to facilitating the more necessary types of traffic. One traffic feature the architects were not able to work out so nicely was the placing of delivery and emergency entrances, which are shown on the same sides of the building as the nursing units. Perhaps it is not a major point, but it would be pleasanter if both these entrances could be so placed that noise or excitement would not be disturbing to patients.

The plan works out a very nice separation of facilities. The first floor houses all service and office departments, locker rooms, emergency, and X-ray. The second floor is left free for maternity nursing units, nurseries, and delivery suites. And the third floor gives a similar isolation to medical and surgical bedrooms and operating suite. Obviously maternity cases will be of major importance here, this department being larger than normal, whereas others seem smaller. Presumably also this is one hospital planned to be large enough for many years to come, since obviously there are no present plans for enlarging or extending the wings, most of which are closed off by permanent facilities.



3. Lawrence County Memorial Hospital, 46 Beds

Lawrence County, Illinois

Lester W. Routt, Architect and Engineer

THIS plan (above) shows unusually good placement of various departments, maintaining both good separation and logical relationships. There is considerable originality evident in this scheme; while there is evidence of reliance on the Public Health Service elements in certain areas, all are obviously carefully adapted to local needs and the schematics are well integrated. Notice that this hospital houses a real public health clinic, including a meeting room, worked in nicely with business offices and out-patient facilities. The plan is generous in space allotments — more than usual for staff and employee facilities. There is a gift shop, a family room, and so on, provisions frequently cut out when costs are pared down. There is also a high proportion of private rooms, which many hospital authorities have been urging, but which does have the effect of increasing the square footage per bed, which in this hospital runs to the unusually high figure of 820.

4. Placid Memorial Hospital, 47 Beds, Lake Placid, New York

Will Alban Cannon & Associates, Architect–Engineers

Basil C. MacLean, M. D., Medical Consultant

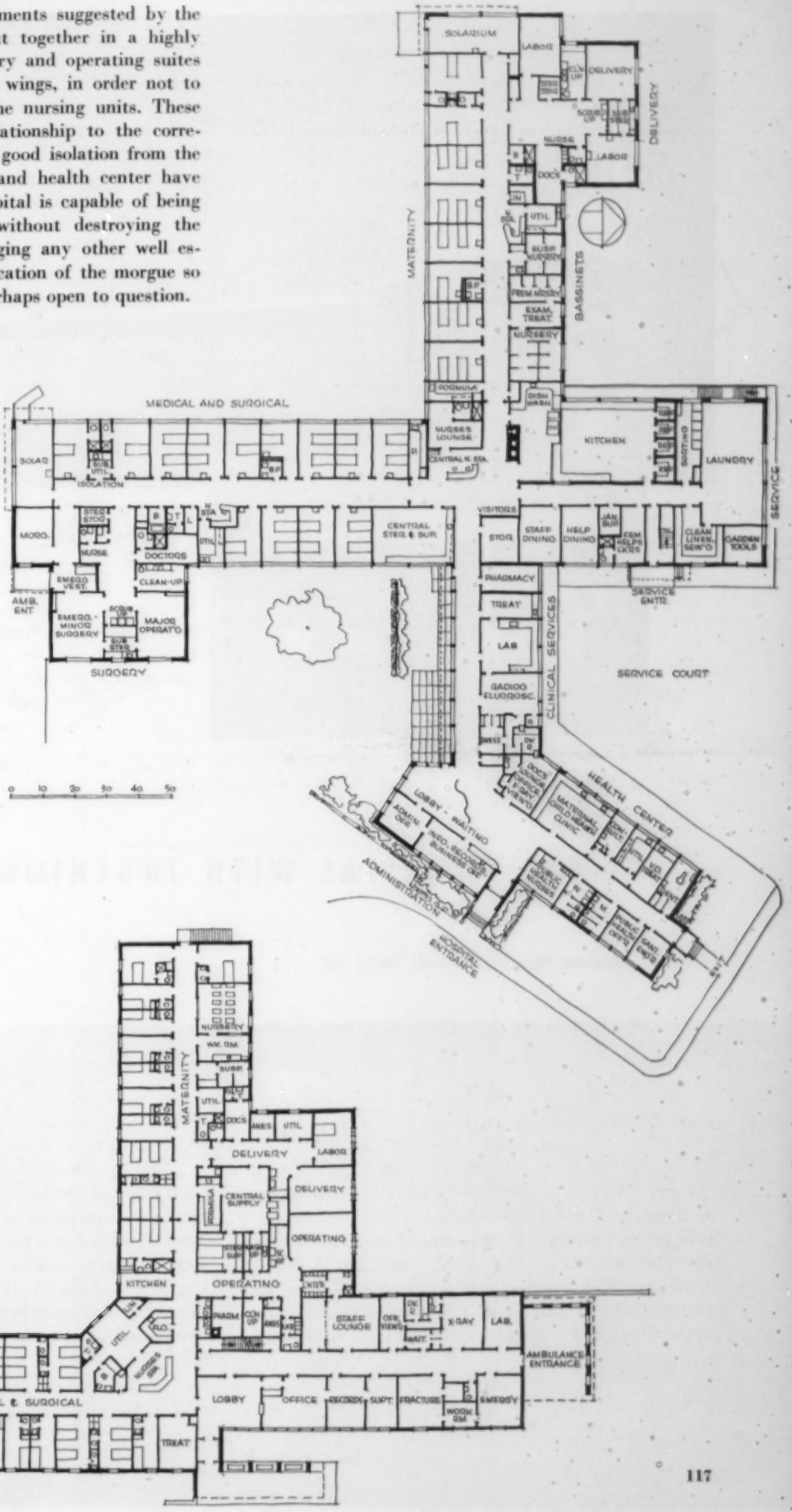
BEING in a famous winter sports area, this hospital (opposite page) has one feature rarely seen — a fracture room in the emergency suite, with a splint room handy for the skiing casualties. Another original arrangement is the placing of delivery and operating rooms in a widened central section of the building. Though adjacent to each other, the two departments maintain excellent separation, and both are close to central supply, sterile supply, and both have good isolation from the rest of the hospital. There is good separation, too, between maternity and medical and surgical nursing units. And yet the central nurses' station provides good night control. The arrangement of nurses' station and utility room is worth some attention, providing a central location and excellent convenience in this combination. The nursery layout here shown is one of those frequently argued about; many doctors would hold out for more provision for isolating and dispersing bassinets.

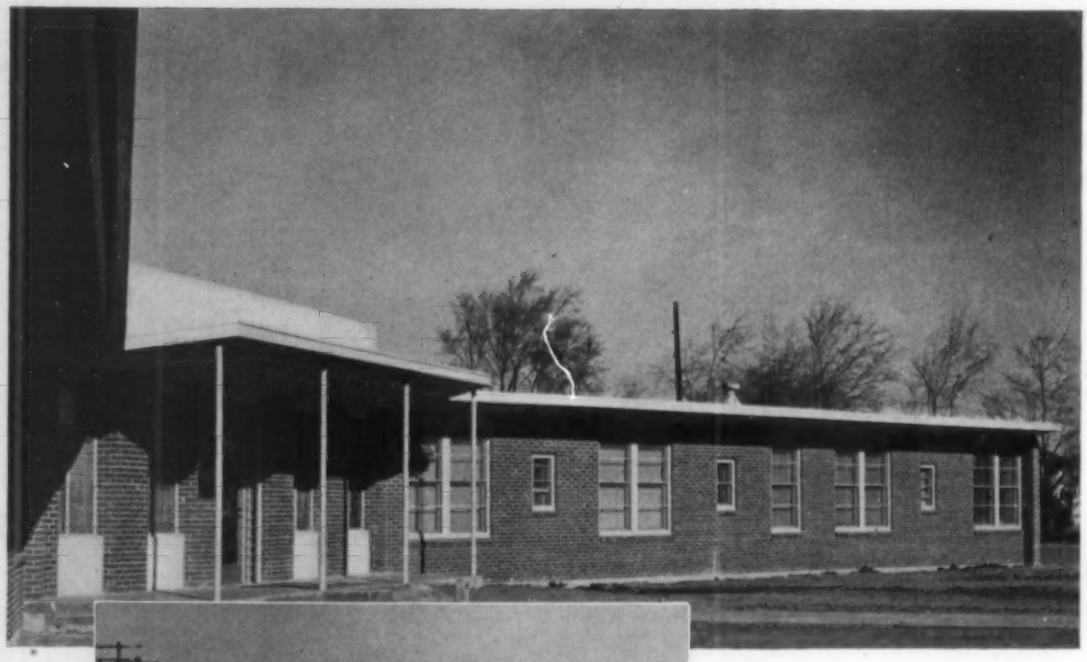
In this plan many of the elements suggested by the Public Health Service are put together in a highly individual scheme. The delivery and operating suites are both turned off the main wings, in order not to block possible expansion of the nursing units. These locations, too, are in good relationship to the corresponding bed areas, and give good isolation from the rest of the hospital. Service and health center have their own wings, and the hospital is capable of being expanded in any direction, without destroying the central control point or changing any other well established relationships. The location of the morgue so near the emergency room is perhaps open to question.

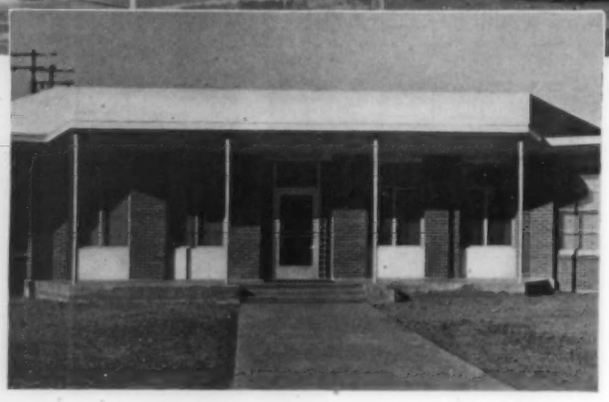
5. Hospital for Washington Court House, 34 Beds

Fayette County, Ohio

Inscho, Brand and Inscho, Architects







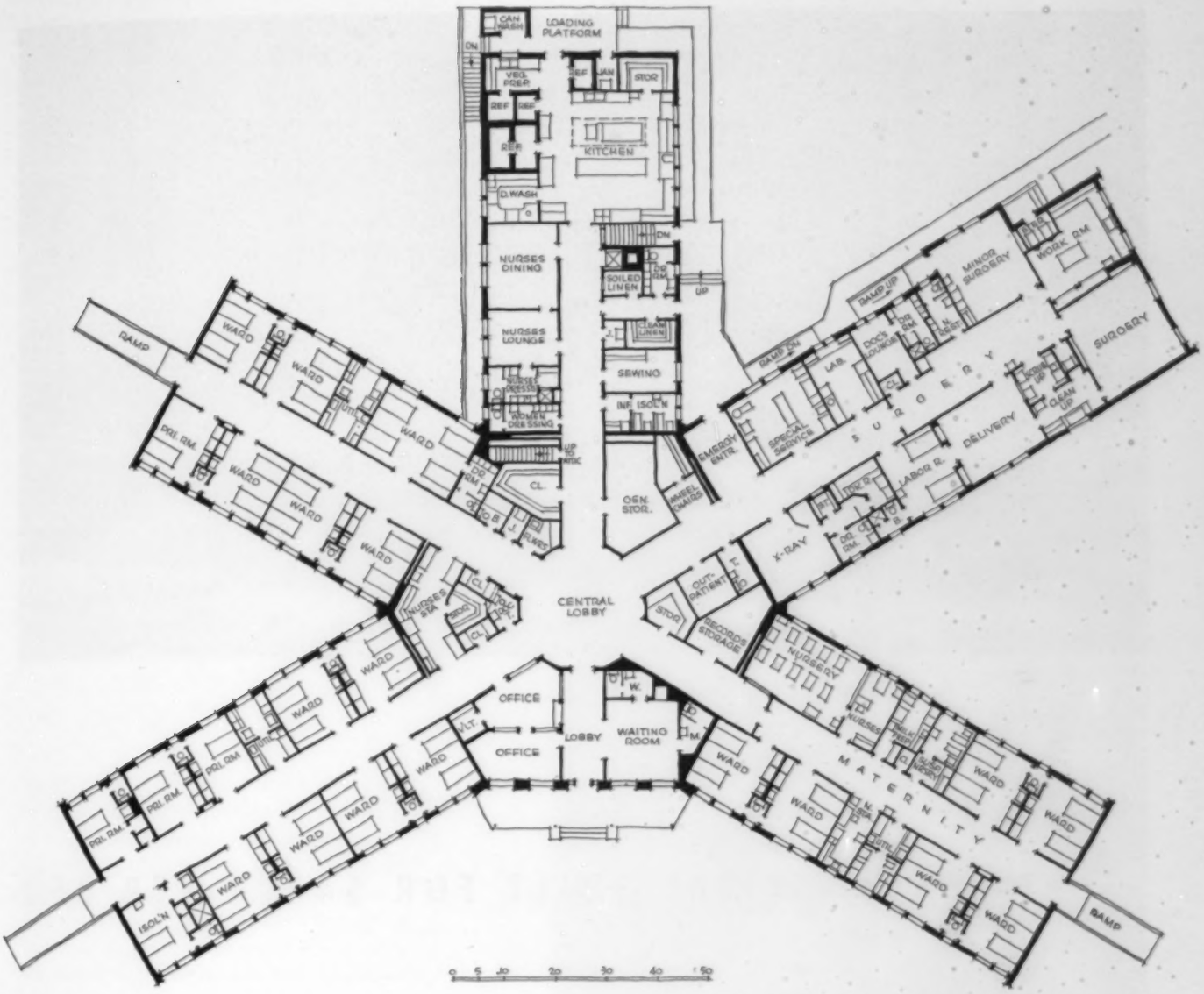
This small hospital, simple and functional in extreme degree, still uses cheerful interior color schemes carefully designed to realize the psychological value of color. This treatment, only dimly suggested by the photos opposite, was given a real "rave notice" by the local newspaper

43-BED HOSPITAL WITH INGENIOUS PLAN

Community Memorial Hospital, Tracy, Cal.

Fred L. Schwartz and William G. Hyberg, Architects

IN the planning of this small hospital — another of those done, under the federal aid program, for the utmost in simplicity and economy — consideration was given to a number of plan schemes; including H, E and L shapes. The building committee and the doctors preferred the hub or finger type plan (shown on the opposite page). They felt it offered the most economical operation and the best traffic flow. It does, obviously, give good separation of major elements and nursing units, also the much-desired central control. The architects comment that after seeing the building in operation they would, if doing it again, design the central lobby to provide greater space between the wings, principally for better outlook and ventilation for patients' rooms.


CAN WASH
LOADING PLATFORM
REF
JAN
STOR
KITCHEN
D. WASH
NURSES DINING
NURSES LOUNGE
SOILED LINEN
CLEAN LINEN
SEWING
INF. ISOLN
EMERGY ENTR.
GEN. STOR.
CENTRAL LOBBY
OFFICE
LOBBY
WAITING ROOM
RAMP
WARD
PRI. RM.
SURGERY
MINOR SURGERY
WORK RM.
LAB.
DOCS LOUNGE
SPECIAL SERVICE
DELIVERY
LABOR R.
X-RAY
OUT-PATIENT
RECORDS STORAGE
NURSERY
MATERNITY
ISOL'N
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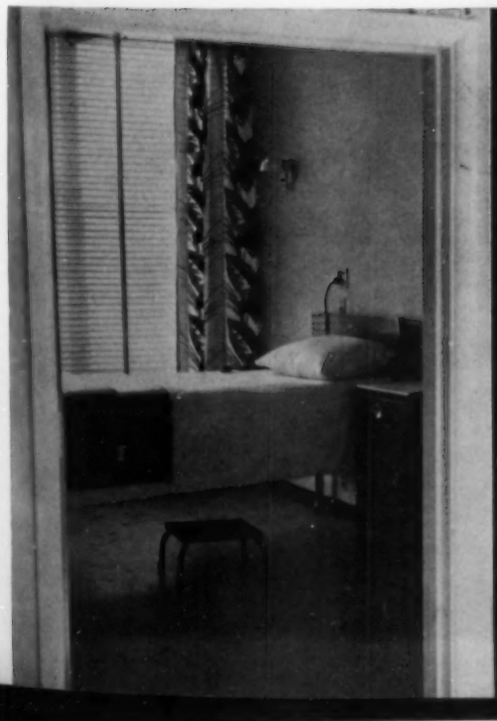
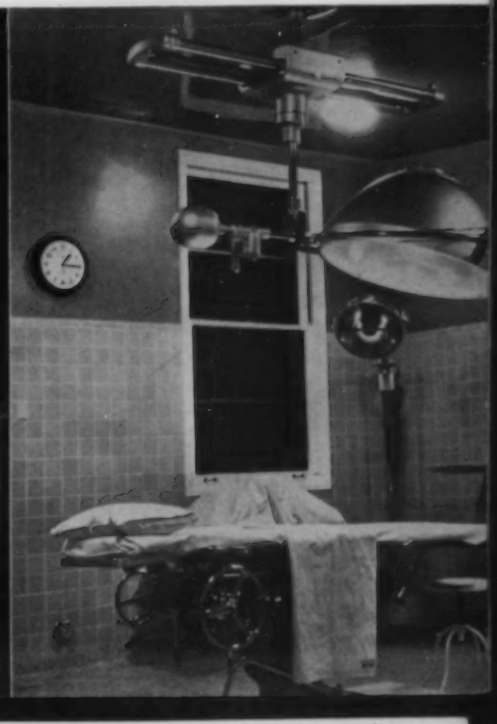
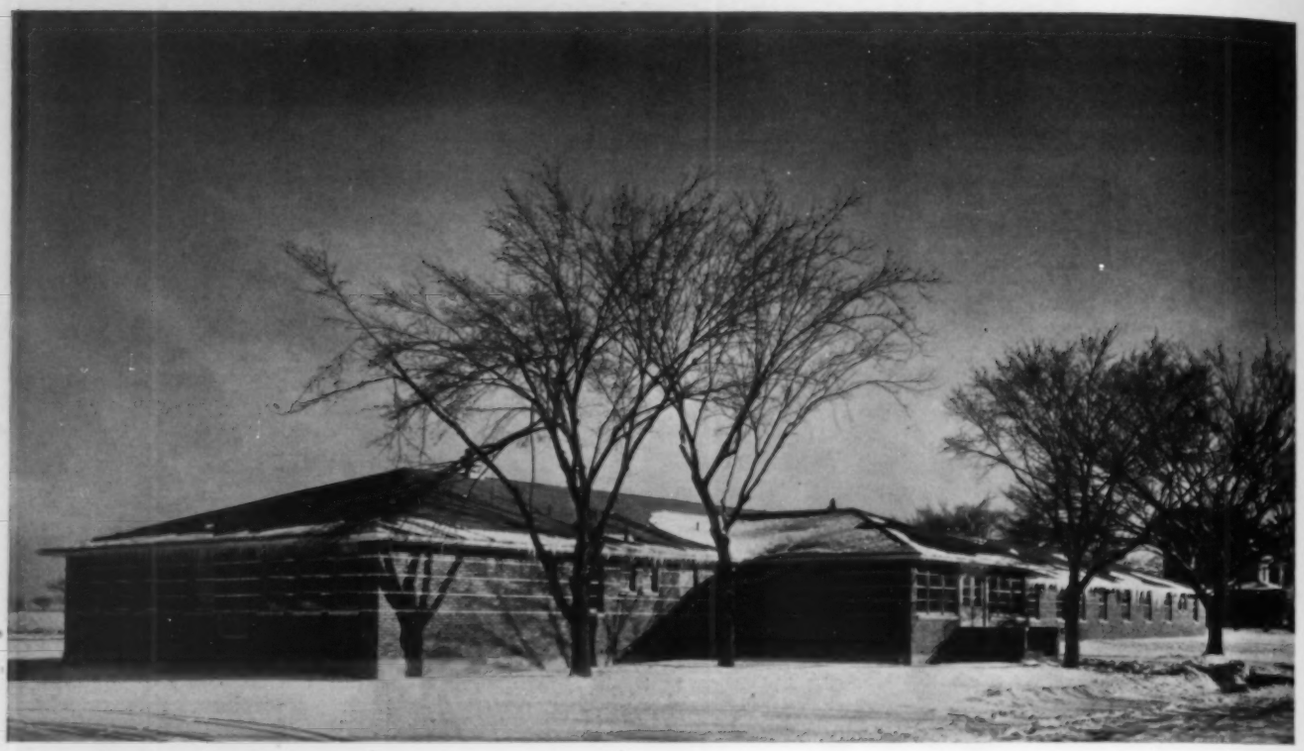






32-BED HOSPITAL BUILT FOR $4400 PER BED

Nowata Hospital, Nowata, Oklahoma

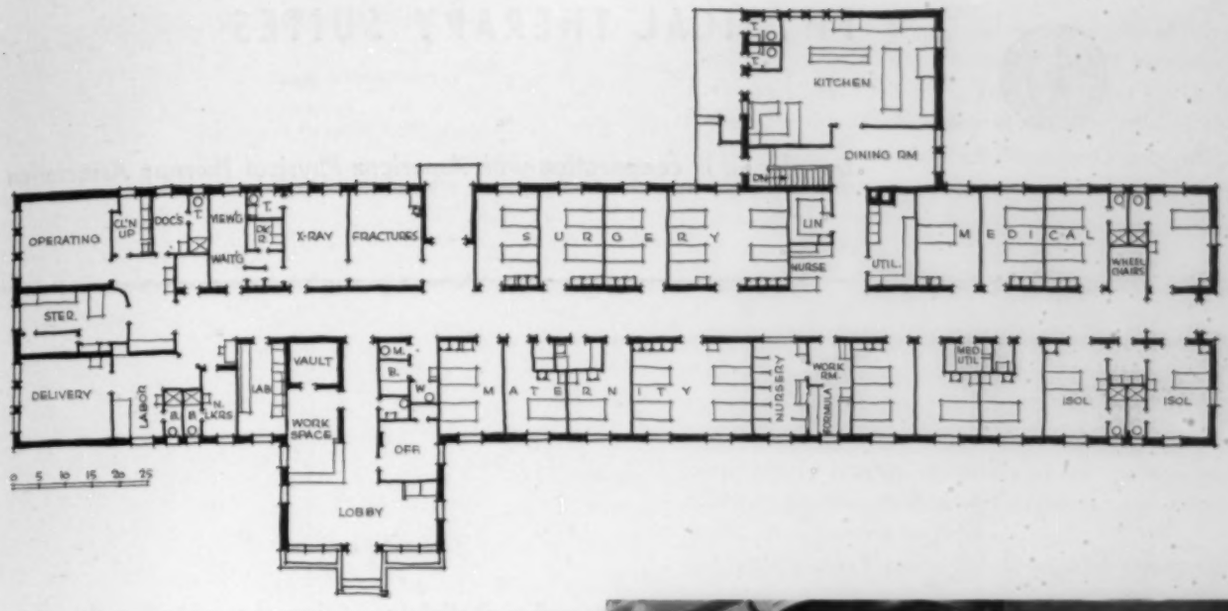
Black and West, Architects; Collins & Gould, Mechanical Engineers

ONE of the earlier hospitals to be completed under the federal aid program, this one was designed to meet an urgent demand for hospital facilities in an outlying area, at a very low per bed cost. Though it provides all of the necessary functions of a small hospital, it was built, and fully equipped, at a cost of $4400 per bed.

It was necessary to use an unusually economical type of construction, and it was felt that the building should not clash with the character of residential buildings surrounding it, hence the pitched roof. The roof is supported on the exterior walls and main corridor walls, allowing for simplicity and uniformity of construction.

The long, straight plan was dictated by considerations of economy, orientation, and ease of supervision. The building extends north and south, paralleling and facing a main thoroughfare, an arrangement which will permit a future wing on the rear of the site to form an H-shaped building. The east-west exposure was also considered desirable for a hospital with bed rooms on both sides of the corridor, giving all partial sunlight. Wide overhanging eaves were incorporated to keep out the hot summer sun. This type of plan, incidentally, is very economical of nurses' energies and time, and permits control of the whole hospital at night by a single nurse.

A large old residence, immediately adjacent to the hospital, is used as a nurses' home.



An unusually economical, practical floor plan for the small hospital. Delivery and operating rooms are well separated, well isolated. Nursing units are distinct by types of patients, yet close together for good control and efficient nursing service. Location of kitchen and dining room was chosen to be central with respect to the nursing areas and to leave room for extending a future wing at the present rear entrance

Hopkins Photography Co.

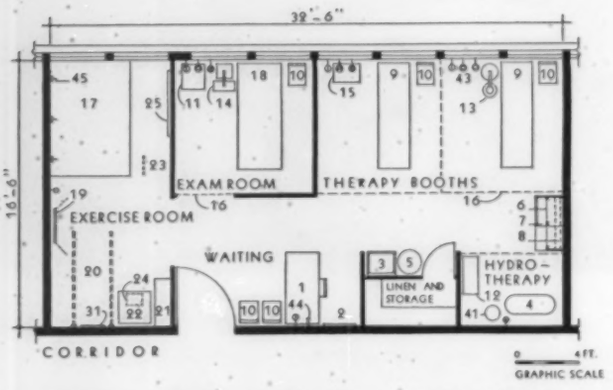
PHYSICAL THERAPY SUITES

Developed in cooperation with American Physical Therapy Association

IN ACCORDANCE with the latest thinking, these plans are a revision of the physical therapy suites published in the ARCHITECTURAL RECORD, June, 1946.

Since each hospital's requirements for physical therapy facilities are different, the plans are intended only as a guide for hospitals of the sizes noted. Patient load as well as availability of therapists will affect the extent of the facilities.

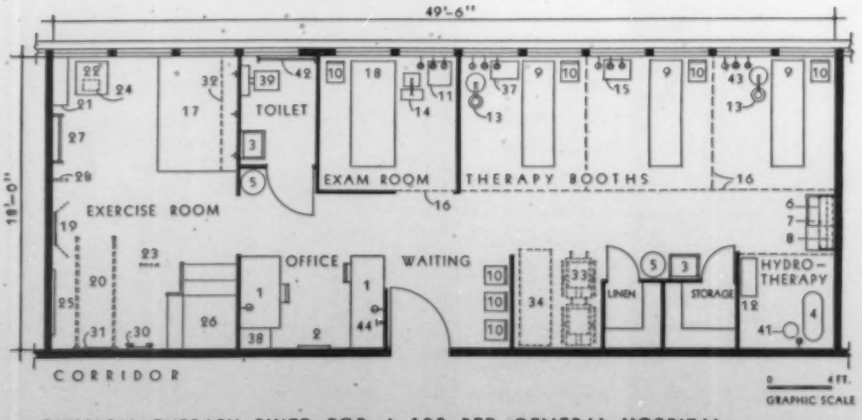
Physical Therapy includes the use of physical and other effective properties of ultra violet and infra-red radiant energy, heat, cold, water, electricity, therapeutic exercise and massage in the treatment of disease



PHYSICAL THERAPY SUITE FOR A 50 BED GENERAL HOSPITAL

LEGEND:

1. Desk
2. Bulletin Board
3. Lavatory with Gooseneck Spout
4. Whirlpool Bath
5. Laundry Hamper
6. Wall Cabinet
7. Sink with Drainboard
8. Glass Shelf over Sink
9. Treatment Table, with storage space below
10. Chair
11. Bedside Table
12. Paraffin Bath
13. Infra Red Lamp



PHYSICAL THERAPY SUITE FOR A 100 BED GENERAL HOSPITAL

and injury and for diagnostic tests. It is used by both in-patients and out-patients and should be located in the hospital for the convenience of both.

Flexibility is important. Development of new treatments will change space requirement and probably result in expansion of the unit. Booths are used for different types of therapy and must be adaptable to all. Hydrotherapy rooms containing fixed equipment are the exception, of course. In some cases privacy is required for the examination of the patient and therefore one or more rooms should be enclosed depending on the anticipated load.

A separate exercise room located so as not to interfere with patient traffic is desirable.

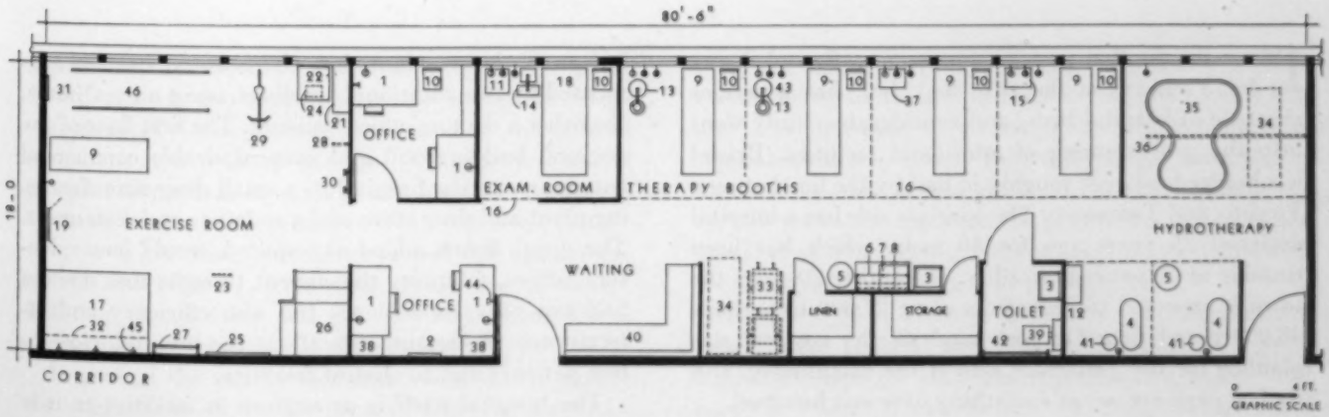
Office and waiting space areas are dependent on the size of the unit. In smaller hospitals one office or desk space in the waiting area for the chief therapist will suffice. Larger hospitals may require a private office for the physician in charge of the department. Wheel chair and stretcher storage space is required in all sizes of hospitals. In smaller hospitals where space is at a premium, it may be omitted and stretchers and wheel chairs stored in adjoining corridors.

Ample storage space for linen and equipment is a necessity. A toilet within the suite is required for use of patients. It is highly desirable to have the toilet large enough to admit a wheel chair. Again in the smaller unit it may be omitted if a suitable toilet is located nearby.

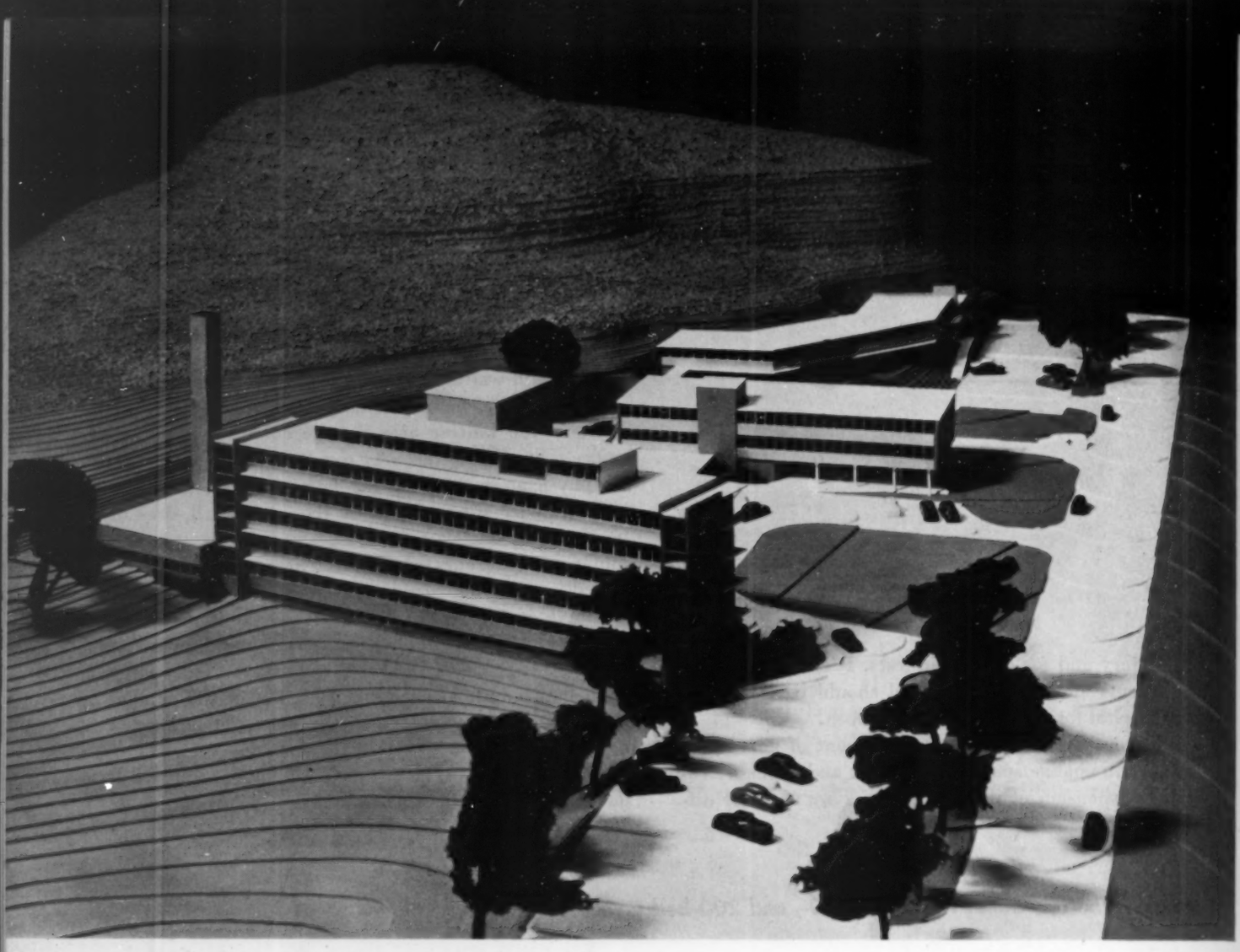
These plans are to be included in a forthcoming manual published by the American Hospital Association.

Physical Therapy Suites for a 50-, 100-, and 200-bed General Hospital

14. Ultra Violet Lamp
15. Short Wave Diathermy Unit
16. Rod and Curtains
17. Gym Mat
18. Examination Table, with storage space below
19. Posture Mirror (Triple, Portable)
20. Parallel Bars, folding type
21. Three Shelves, 6 in., 2 ft. 3 in., and 4 ft. above floor
22. Table, 24 in. by 24 in.
23. Sayre Head Sling, attached to ceiling
24. Foot Rest
25. Shoulder Wheel
26. Steps
27. Stall Bars
28. Shoulder Abduction Ladder, arch type
29. Stationary Bicycle
30. Pulley Weights
31. Wall Mirror
32. Shelf, 6 ft. above floor
33. Wheel Chair
34. Wheel Stretcher
35. Hubbard Tank. A therapeutic pool 8 ft. by 12 ft. may replace the Hubbard tank by increasing length of suite
36. Monorail over
37. Direct Current Generators
38. File Cabinet
39. Water Closet
40. Bench
41. Adjustable Stool
42. Hand Rail
43. Three Single Outlets on Separate Branch Circuits, 1 outlet 2-pole, 2 outlets 3-pole
44. Telephone Outlet
45. Gym Mat Hooks
46. Parallel Bars



PHYSICAL THERAPY SUITE FOR A 200 BED GENERAL HOSPITAL



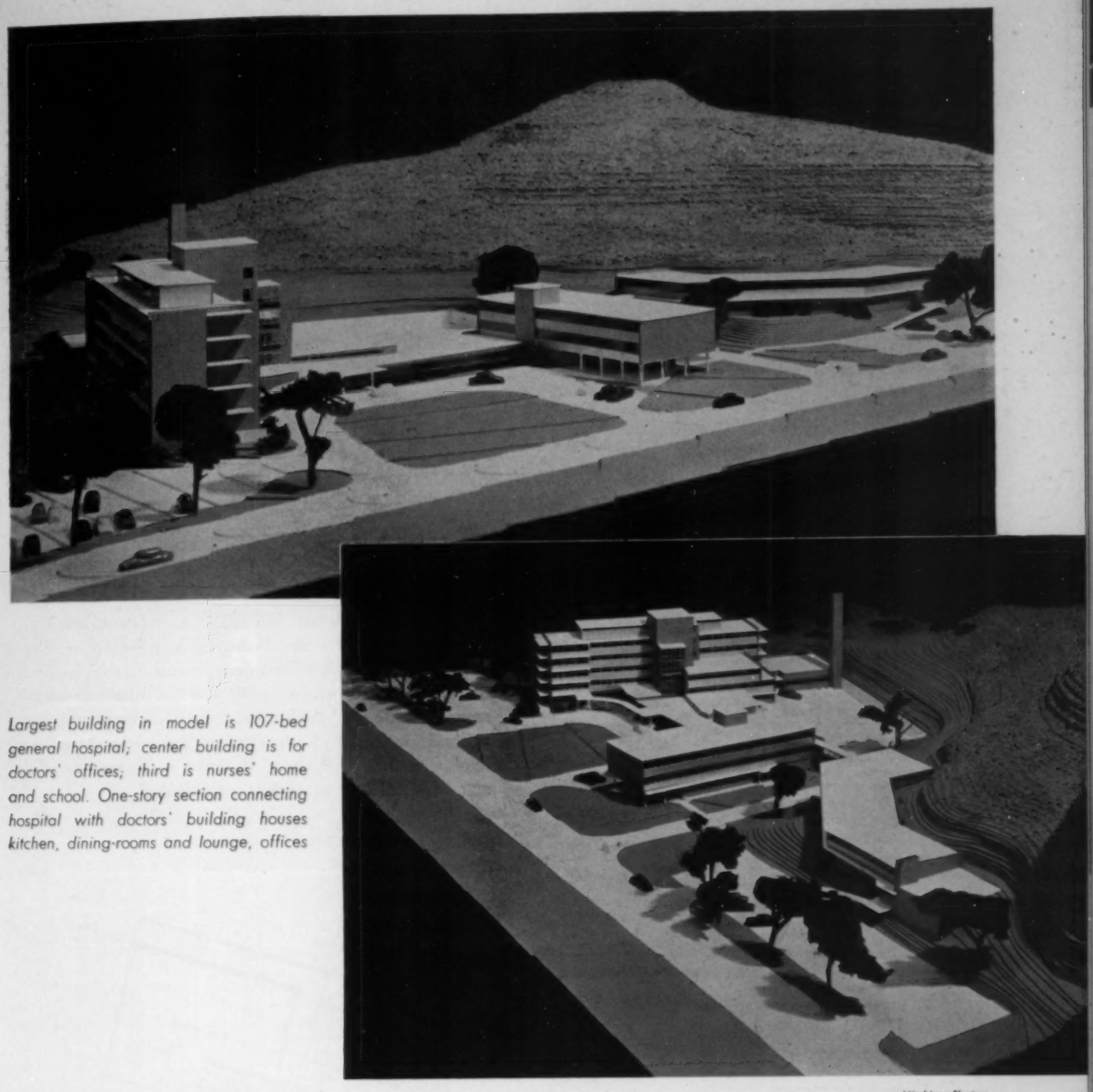
100-BED HOSPITAL WITH DOCTORS' OFFICE BUILDING

Dent and Aydelott, Architects — *Bristol Memorial Hospital, Bristol, Tennessee-Virginia*

LIKE many another growing community, Bristol, Tenn. (or Virginia, as the case may be), has a serious shortage of hospital beds, and considerable study went into the programming of additional facilities. Bristol is a border town, cut roughly in half by the line between Virginia and Tennessee. The Virginia side has a hospital designed 25 years ago for 40 beds, which has been running at 60 patients steadily. In another 20 years the town is expected to grow from some 27,000 to perhaps 48,000 population. On such analysis the hospital was planned for the Tennessee side of the community, and its bed capacity set at something over one hundred.

A glance at the model would seem to indicate that this is a much larger plant, but the hospital itself is augmented by two additional buildings, one a nurses' home, the other a doctors' office building. The first floor of the doctors' building will add some desirable commercial enterprises to the hospital — a small drug manufacturing plant and drug store and a soda bar and restaurant. The upper floors, added as required, would house doctors' offices, following the current thought that doctors find not only convenience but also efficiency and effectiveness in locating directly at the hospital, close to bed patients and to clinical facilities.

The hospital itself is as modern in facilities as it is in appearance. There is a large out-patient department



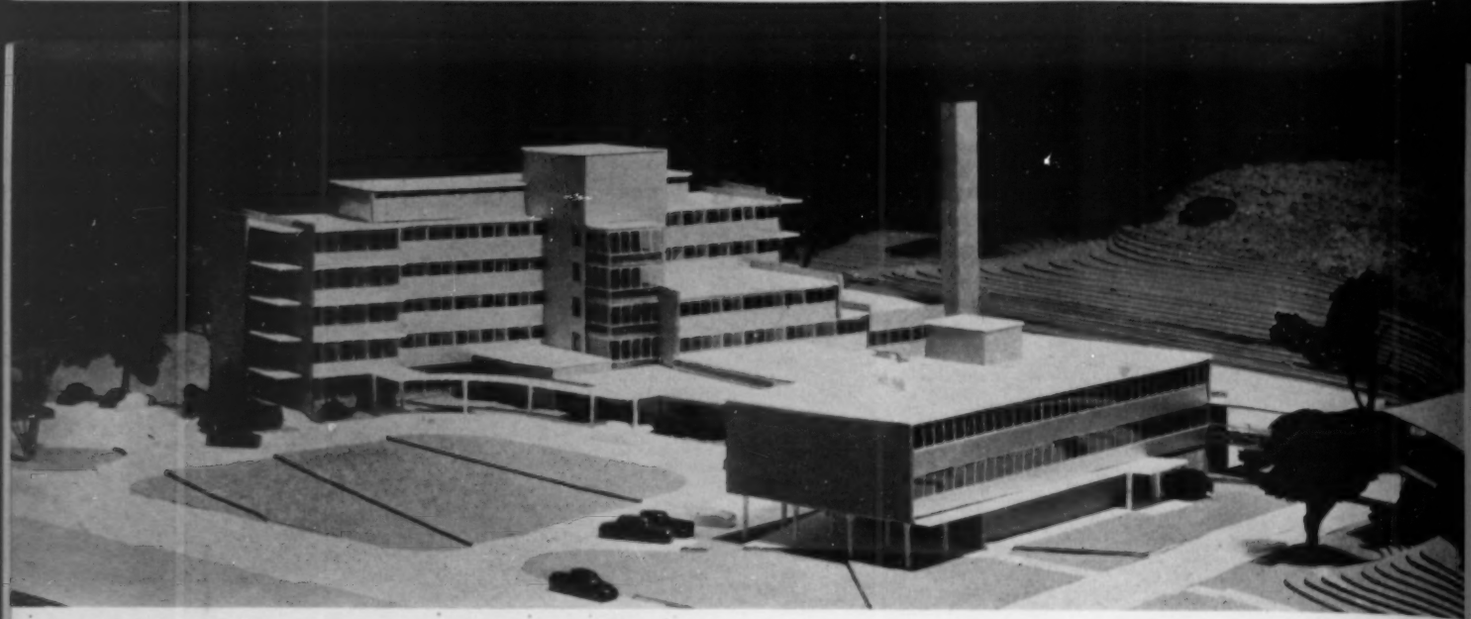
Largest building in model is 107-bed general hospital; center building is for doctors' offices; third is nurses' home and school. One-story section connecting hospital with doctors' building houses kitchen, dining-rooms and lounge, offices

Hitchings Photos

adjoining an unusually extensive X-ray department. And the plan is quite ingenious in combining the "modern" type of nursing units, with most of the patient rooms strung out along the southern exposure, and a compact disposition of medical and surgical facilities in a central location. These are stacked up in a three-story wing, only the wing is in effect turned flat against the side of the building. This device gives the necessary isolation to operating and delivery suites, and keeps them close to elevators and nursing units.

In general the various elements follow rather closely the suggestions of the Division of Hospital Facilities of the U. S. Public Health Service. The nursing units have the offset corridor scheme, with nearly all bed rooms facing south, and utilities taking the narrow side and less desirable exposure. This arrangement also separates nursing rooms from the noisier activities — all entrances are at the other side of the building, the service entrance the farthest removed from the bed areas. It also blocks out the low east and west sun with the stair wells at the ends of the wings.

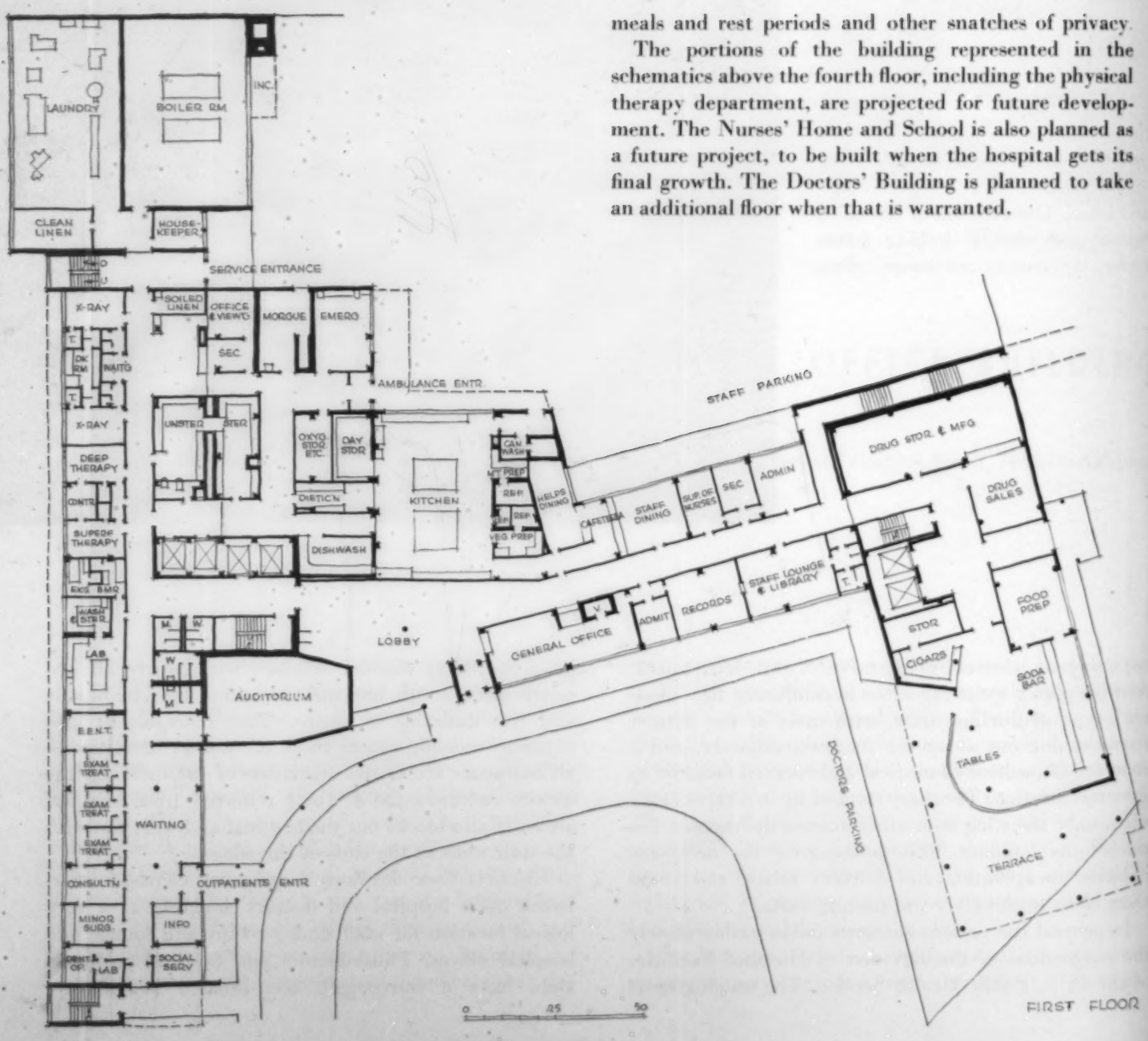
The first floor develops a one-story connection between main hospital and doctors' building as a very logical location for staff dining-rooms and lounge and hospital offices. Thus doctors and hospital personnel alike have a convenient, semi-isolated location for



Hitchings Photos

meals and rest periods and other snatches of privacy.

The portions of the building represented in the schematics above the fourth floor, including the physical therapy department, are projected for future development. The Nurses' Home and School is also planned as a future project, to be built when the hospital gets its final growth. The Doctors' Building is planned to take an additional floor when that is warranted.



NURSERY
ROOF
LABOR
DELIVERY
PANTRY
WAIT'G
BALCONY
THIRD FLOOR
OBSTETRICAL
4TH & 5TH FLOORS
NURSING
EXERCISE
SOLARIUM
OPEN DECK
SIXTH FLOOR
PHYS. THERAPY
FRACTURE
CYSTOSCOPY
MINOR SURGERY
MAJOR SURGERY
WAITING
DOCTORS OFFICE
SECOND FLOOR - SURGICAL

PSYCHIATRIC FACILITIES FOR THE GENERAL HOSPITAL

By Paul Haun, M.D., D.M.S. in Neurology

Assistant Professor of Psychiatry, Georgetown University Medical School

Brief extracts from a forthcoming book, "Psychiatric Sections in General Hospitals," by the same author, to be published soon by ARCHITECTURAL RECORD

AN INCREASING awareness of the frequency and importance of psychiatric illness has grown out of the experiences of the recent war. Of the men and women called up for examination, the Selective Service found it necessary to reject 24 per cent because of psychiatric or neurological disability. The Army reports that 45 per cent of its medical discharges were for the same cause, and the Navy states that 32 per cent of its medical surveys fell within this category. An analysis of Veterans Administration statistics shows that over 51 per cent of beneficiaries under hospital treatment are receiving care for mental and emotional illnesses. Such an accumulation of evidence cannot be ignored. Dr. Parran of the United States Public Health Service places the incidence of psychiatric illness in the general population at 10 per cent, and the medical profession has long estimated that 60 per cent of the patients seen in private practice would unquestionably profit by careful psychiatric attention.

Public Health authorities and the psychiatric profession for many years have been aware of the need for earlier recognition, easier hospitalization and better treatment for these unfortunate individuals, but many factors have prevented the general application of this knowledge. Not least among such impediments has been public prejudice coupled with the familiar inertia common to all social progress.

It is unfortunately true that many "General Hospitals" although professing to give the community every service, have ignored the need for psychiatric facilities in their building programs and in their operational activities. Contemporary thought does not, of course, anticipate the elimination of exclusively psychiatric hospitals and sanitaria, peculiarly adapted as they are for the long-term care of those patients resistant to therapy who require a protected environment and protracted segregation from society. It does, however, recognize that the pressing medical needs of a large segment of the population are unmet in those communities which deny the psychiatric invalid care in any but a psychiatric institution and, in addition, withhold the benefits of appropriate help from the medical and surgical patient who must make good his recovery in a sterile atmosphere of scalpels and antisepsis.

The advantages of a truly General Hospital in which all specialties are integrated to the patients' benefit are many. Certain of them will bear reiteration:

1. Obligation to the Community

The hospital has an obligation to meet the complete health requirements of the community as fully as possible. It is indefensible to disregard the needs of an estimated 60 per cent of its clientele, to deny relatives and friends reasonable convenience in visiting their sick and to ignore its preventive duties in the field of mental hygiene. Psychiatrists cannot be expected to practice in a community which offers them no hospital facilities. Early recognition and appropriate treatment of psychiatric disorders can prevent many of them from becoming chronic and disabling, thus materially reducing the number of admissions to psychiatric hospitals.

2. *Improved Patient Care*

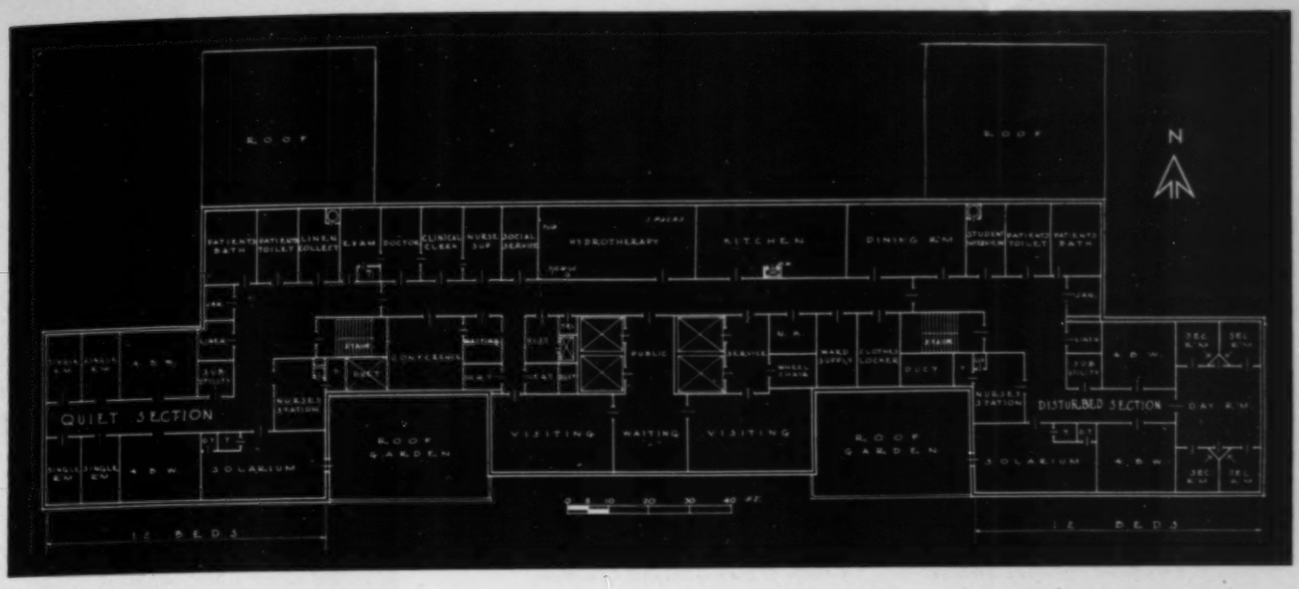
The medical and surgical patient will directly benefit, inasmuch as the recognition and elucidation of the emotional components accompanying every type of illness is best done by the psychiatrist working in close cooperation with the surgeon and the internist. Such a liaison, achieved to its fullest in the practice of psychosomatic medicine, raises the calibre of medical care available to all.

The psychiatric patient on the other hand benefits by the immediate availability of skilled surgeons and internists. Transfer of patients between services is facilitated, insuring the best possible treatment not only of the patient's primary disease but also of any concurrent disorder.

A superior grade of professional consultation is available to every patient, since all specialties will conduct active diagnostic and treatment wards.

3. *Elimination of Stigma and Improvement of Morale*

The creation of psychiatric, medical and surgical services in one hospital will remove much of the stigma attaching to the admission of a patient in need of psychiatric attention. While actually in the hospital, if his disorder be sufficiently mild, his contacts with patients



This plan for the psychiatric section of a veterans' hospital, one of several analyzed in detail in Dr. Haun's book, is rated as "excellent," and is given here as an example of the general planning requirements. Good points mentioned in this particular plan include: a good arrangement of patients' wards and single rooms, with private day room for secluded patients in the disturbed section; an exceptionally fortunate placing of nurse's station, giving supervision of patients' corridor, solarium and roof garden; good placing of both hydrotherapy room and dining room so that they can be reached by patients from either section without interference from the other; good location for the doctor's office, affording privacy along with easy access to nursing unit. Dr. Haun points out that a central location for the male attendants' toilet is not desirable, as it takes the attendant out of the ward and may encourage soldiering. Patients' entrances to visiting rooms are not too good, neither are janitor's closet locations, or the linen chute in the interview room. In general the floor provides good security and privacy.

suffering from more objective illnesses, quite unrelated to his own, may help him overcome an unwarranted sense of shame regarding his own incapacity. The optimism and cheerfulness shown on a well run minor surgery ward can, for instance, materially raise the morale of patients suffering from more chronic disorders.

4. *Improved Professional Skills*

Contacts between physicians in all services and specialties broadens the vision of each staff member and keeps alive his interest in professional advancement. Staff conferences, journal club meetings, clinical pathological seminars, general ward rounds, are all most effective in the setting of the General Hospital. The surgeon profits by the insight of the psychiatrist, and the psychiatrist by the concrete and tangible contributions of the surgeon. The now discredited dichotomy in the thinking of physicians as well as of the public that illness may be *either* physical *or* mental is hardly possible in such an environment. The modern medical viewpoint receives additional emphasis in its teaching that both aspects of illness are inter-related and inseparable.

5. *Research*

An advantage to be stressed, particularly in teaching hospitals, is the favorable setting afforded to research. With the concentration of many professional talents in one institution, and the availability of diverse scientific skills ordinarily lacking in the specialized hospital, highly promising research projects can be launched with considerable optimism.

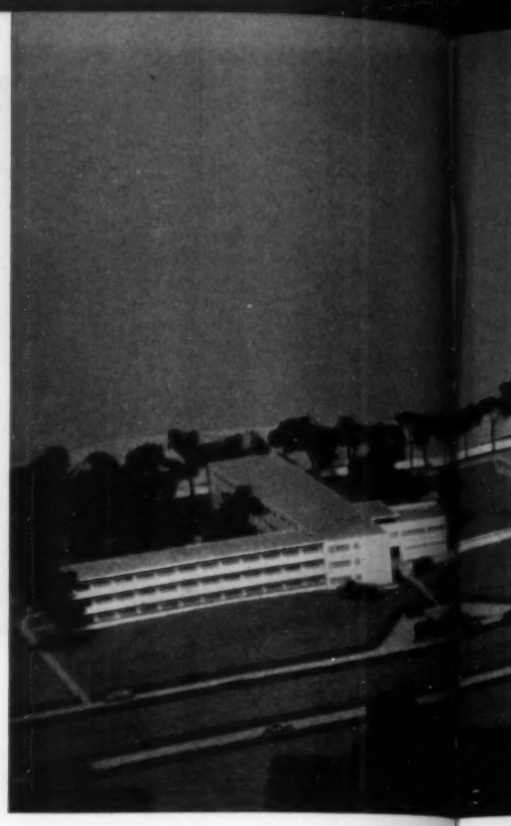
6. *Economy of Operation*

In contrast to a group of specialty hospitals, one general hospital can be more economically operated, since administrative, technical and laboratory staffs need not be duplicated. Such staffs, by virtue of their increased size and the broader skills of their personnel, can provide a higher calibre of service to the patient at less cost per capita. Utilization of the same equipment by many medical departments affords an additional economy. For example, the extensive physical therapy facilities necessary on a well run orthopedic service can be profitably used by patients on all other hospital services.

There is today no question of the need for corrective measures to meet the problems of mental illness. There is no doubt that pressures from expert opinion and an enlightened society will be increasingly felt in the direction of easier hospitalization, more intensive therapy and improved physical facilities. The effect of the nationwide Veterans Administration program on this trend is already profound. There is good reason to hope that the time is not far distant when psychiatric units will be included in General Hospitals as a matter of course and omitted only after careful deliberation and under the weight of compelling medical considerations.

Guatemala, C. A.

ROOSEVELT MEDICAL CENTER



Samuel T. Drew
Director of IIAA in Guatemala

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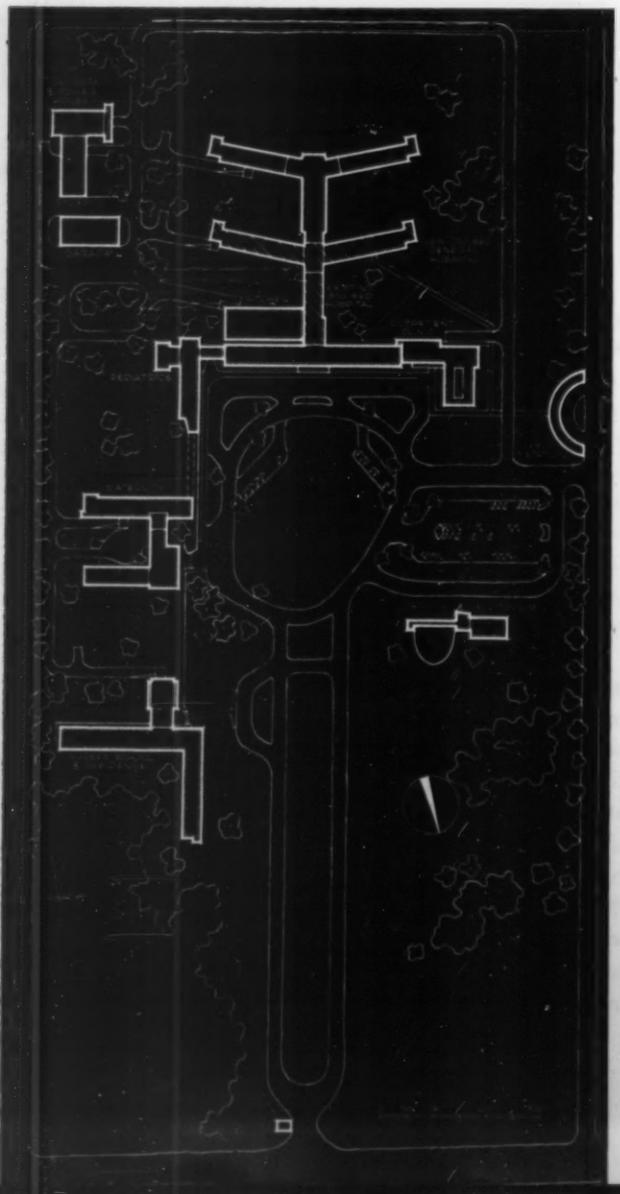
William H. Brownyard, Associate Architect
Carlos Asensio W., Associate Architect
Hartwell M. Webb, Associate Architect
Joaquin Olivares, Associate Architect
Warren Viessman, Mechanical-Electrical Engineer
George Dale, Mechanical-Electrical Engineer
Terence Egan-Wyer, Assoc. Mech.-Elec.-Engineer

Edmund J. Whiting
Architect-in-Charge

Henry W. Kolbe, M.D. Hospital Consultant
Harry E. Brown, Hospital Consultant
John T. Howell, Structural Engineer
James F. Goodwin, Structural Engineer
Harold G. Conger, Structural Engineer
Ricardo Torres G., Assoc. Structural Engineer
Alston G Guttersen, Architect of 300-Bed Hospital



IN these expensive times when architects in this country are concerned with the rising hospital costs, of $12,000 to $18,000 per bed, it is of considerable interest that this Medical Center, now under construction in Guatemala City, is costing less than $5000 per bed, fully equipped. The centralization of administration and control, basic services, and adjunct diagnostic and therapeutic facilities, has been the principal consideration governing design. This centralization of facilities and services, properly coordinated in relation to each other and to the nursing units, results in economy of construction, economy of maintenance, and efficiency in patient care. Centralization is particularly necessary in the Roosevelt Medical Center, as trained administrators and technicians are available in Guatemala only in limited numbers and must be utilized to their utmost capacity.

Planned and constructed under the supervision of U. S. hospital experts of the Institute of Inter-American Affairs, and financed by the governments of both Guatemala and the United States, this hospital will provide the nucleus of lifelong medical care for the people of Guatemala. Of equal importance, as the new medical school is planned in close conjunction with the Center, medical students will have available modern therapeutic and diagnostic facilities for research work and observation under the direction of hospital specialists. Following a program established by Guatemalan technicians the Medical Center consists of an acute general hospital of 700 beds, and separate units of 150 beds for pediatrics and 150 beds for maternity. No contagious disease cases will be permitted in the Hospital, nor will chronic cases, T.B., psychiatric or convalescent cases be included in the 1000 beds. When

funds are available, however, it is considered probable that additional hospitals will be built on land immediately to the south of the present buildings.

The central unit of the group is the 700-bed acute general hospital, which includes the administration and control, adjunct facilities, and basic services of the Medical Center. This large unit has been developed of necessity along horizontal rather than vertical lines to make use of the three-story and basement concrete shell of an unfinished 300-bed hospital. Horizontal development also was indicated because of the extremely severe earthquakes which have repeatedly devastated Guatemala in the past. The cost of earthquake resisting reinforced concrete design increases greatly as forces grow in proportion to building height.

Orientation of patients' rooms in the existing unfinished 300-bed hospital was principally to the south south-west. Although orientation in the latitude and cool even climate of 5000-ft.-high Guatemala does not have the significance that it has in the United States, the southern orientation of the original building was accepted as satisfactory. The majority of the patients' rooms in the Medical Center face the south south-west.

Pediatrics and Maternity are not separate hospitals, but are separate units of a closely-knit group. Thus the maternity unit is protected against infection from the other units of the hospital by the elimination of interchange of personnel and supplies. The pediatrics unit, a possible source of infection, is also separated by physical barriers. As both pediatrics and maternity are separate sections and not tied down by predetermined form, the space relationships between the functions and services in each unit have been first logically organized and then developed into the most efficient possible combination. Pediatrics connects directly to the administration and adjunct service section of the general hospital. The maternity unit is connected to pediatrics and the general hospital by tunnel.

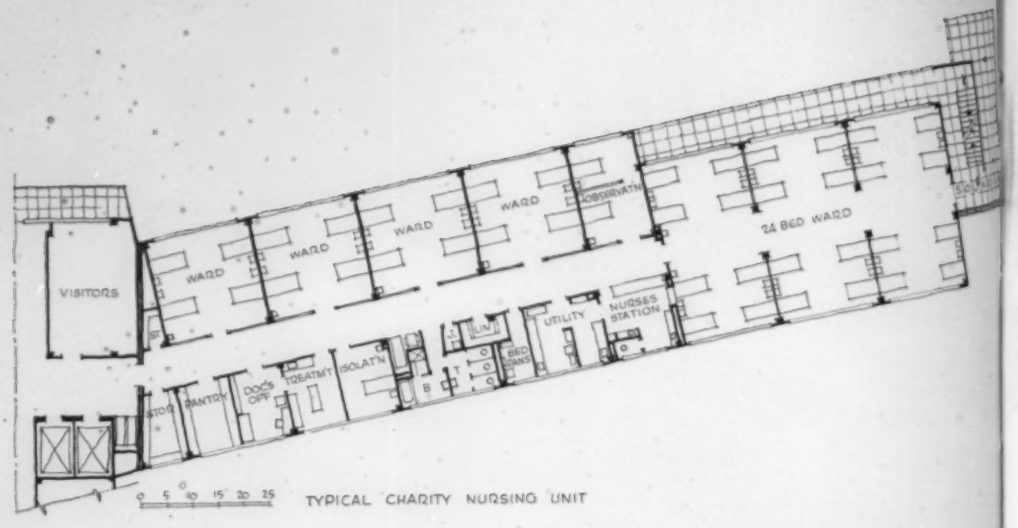
The laundry, service building and garage form a separate unit to the east of the general hospital. The laundry collects and distributes linen in small trucks, which have access, by means of ramps, to basement service entrances in each of the main hospital units. Service roads of the Medical Center have been isolated as far as possible from patient areas and concentrated in one section of the grounds.

The plot plan emphasizes the stress placed on educational facilities. The future Medical School, to the west, is outside the hospital grounds, but forms an integral part of the over-all plan. The Nursing School and Residence, to the north, is connected to the hospital by walk and tunnel, but is separated from immediate proximity to patient areas and has convenient access to the main highway. Between the Medical School and the Nurses' School is a research library and auditorium. The traffic circle furnishes one-way access for doctors, patients, visitors and students from both the Pan American Highway and the Medical School to the various units of the Medical Center. A bus station has been located on the side street to give close pedestrian access to the out-patient department and to the general hospital entrance, as well as convenient access to the hospital employees' entrance.

The 700-bed acute general hospital contains the administrative center, the diagnostic and therapeutic adjunct facilities and most of the basic services of the

GENERAL HOSPITAL

Charity wards of 40 beds are planned for economic, efficient service. Utility rooms open directly from centrally located nursing station to facilitate supervision of nurses' activities. Bedpan services are in separate outside ventilated room. Dishwashing is done in centrally located rooms (two per floor) outside ward areas



TYPICAL CHARITY NURSING UNIT

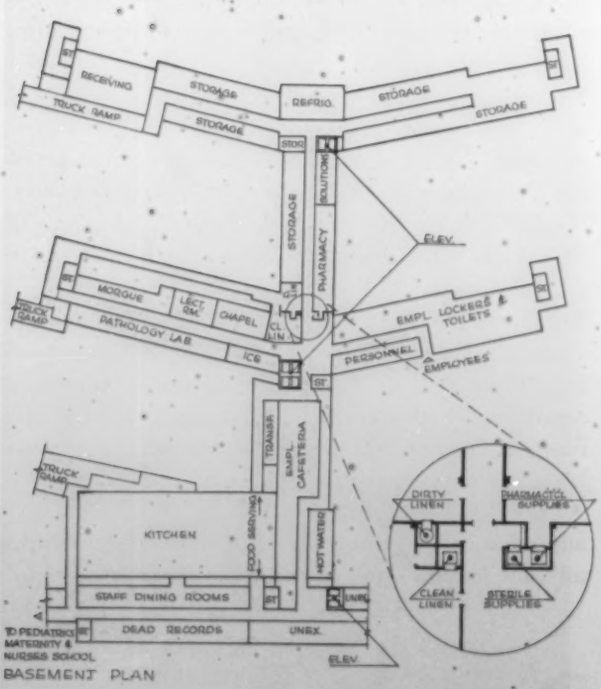
Medical Center group. These centralized facilities have been planned as efficient units, properly coordinated to each other and to patients' wards. Basic services include the kitchen and its related elements, doctors' and employees' dining rooms, employees' service facilities, admission department, emergency section, operating and sterilization departments; manufacturing and dispensing pharmacy, morgue and autopsy services, and storerooms. The Medical Center out-patient department is also centralized in the General Hospital.

In studying the facilities provided for each department, it must be borne in mind that the actual solution in every case has been based on such local factors as available money for construction and equipment, available budget for maintenance and personnel, available doctors, technicians and trained employees to use facilities and equipment.

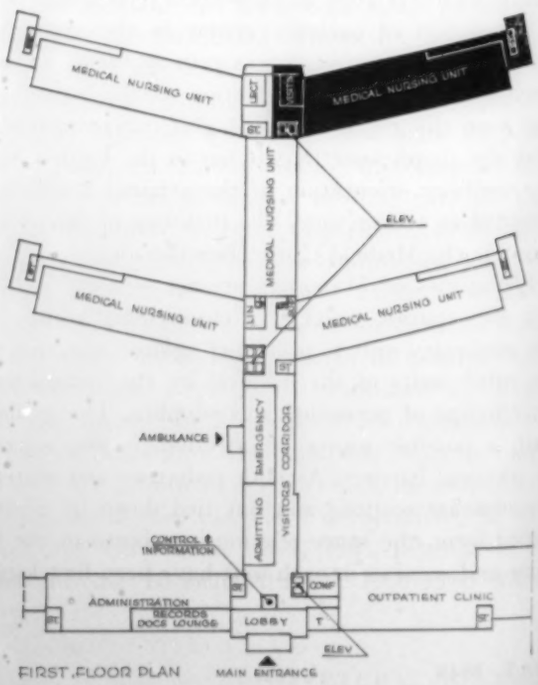
The control point of the 700-bed unit, opposite the main entrance, is so placed that it supervises access to the administration department, the admission section and the nursing units of the hospital, as well as the entrance of patients from the O.P.D. who need hospitalization.

The emergency department with ambulance entrance is located adjacent to the admission unit. This relationship is desirable in a large hospital since many emergency cases are hospitalized and must go through routine admitting procedures.

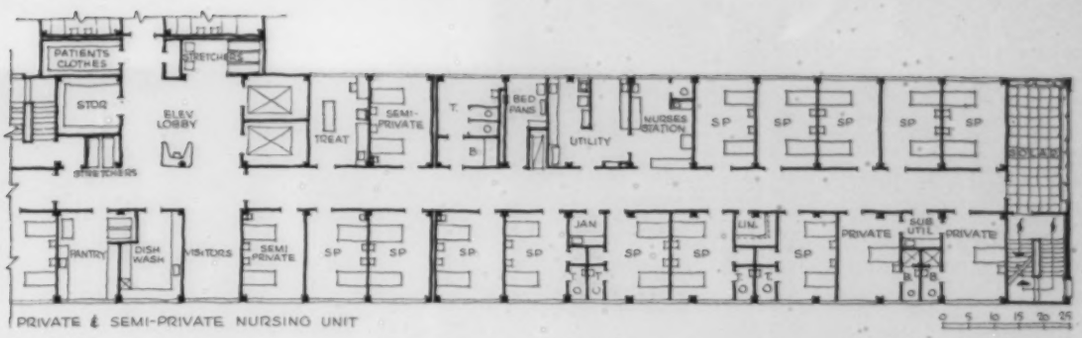
Although the building was developed of necessity along horizontal lines, a central vertical service and supply core is a feature of the plan. The central pharmacy and solution department, the linen supply (both in the basement) and sterile storage on the fourth floor, dispense supplies by means of their respective automatic dumbwaiters to all floors of the hospital. The soiled linen chute, isolated from but adjacent to clean linen supply, facilitates careful control of inventory, as soiled linen room is conveniently near clean linen storage in the basement. The four centrally located elevators take care of patient, visitor, and service vertical circulation. The two rear elevators are principally for surgical traffic; the two elevators off the entrance lobby are prin-



BASEMENT PLAN



FIRST FLOOR PLAN MAIN ENTRANCE

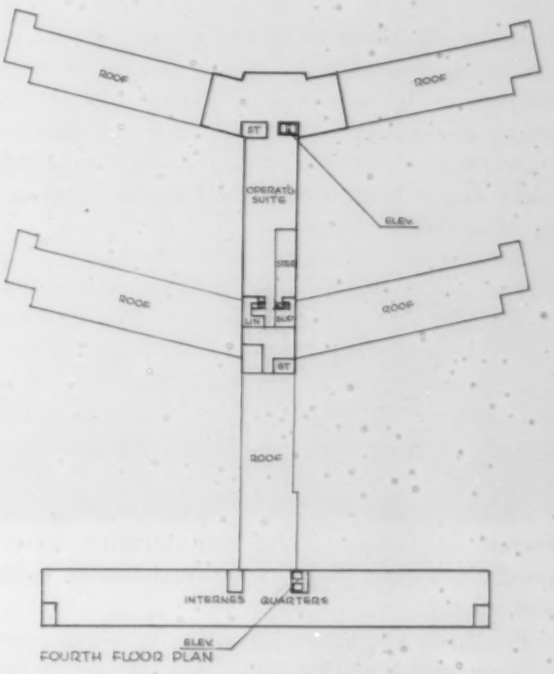


Private and semi-private nursing units of 26–30 beds have same nursing station utility room plan. Isolation rooms with sub-utility have been provided. Ward kitchen and dishwashing rooms between nursing units give double service. Patients' clothes, as in charity wards, are kept in lockers in special rooms for that purpose

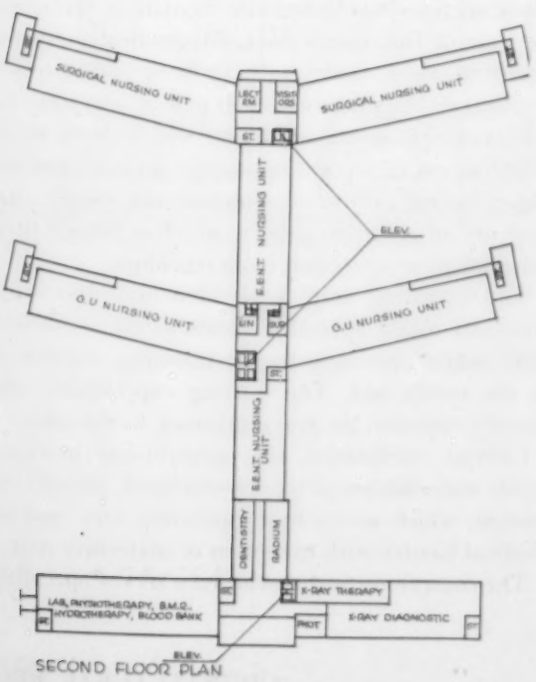
cipally for private and semi-private wards and interns.

In the basement, centrally located with relation to the area it serves, are the kitchen and food service facilities for the whole Medical Center group. The ample kitchen with 22 ft. square column spacing is a separate building of saw-tooth roof construction. Air from the kitchen is mechanically expelled from the top of the administration building. Electrically heated food trucks deliver meals to wards in all units of the Center by means of service tunnels and elevators.

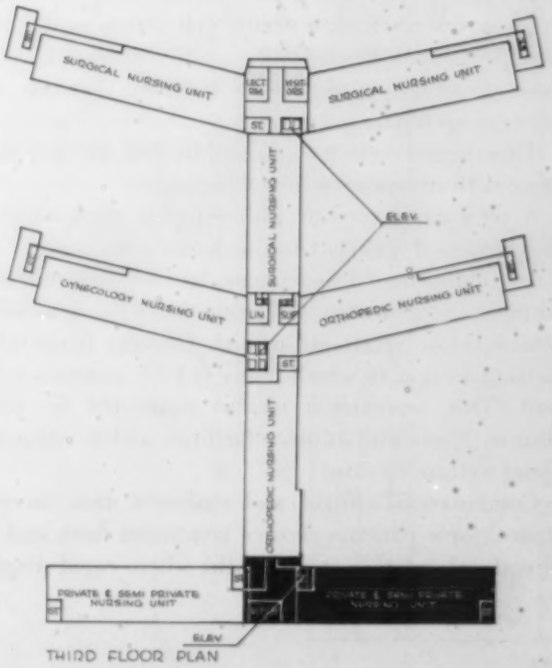
The structure of the General Hospital and all units of the Medical Center is of earthquake resisting architectural concrete. For earthquake resistance emphasis has been placed on membrane walls running transversely across buildings. Allowances for earthquake thrusts have been made in foundation design. Building groups have been divided into separate rectangular units with four inches separation between. Thus each unit during earthquakes can oscillate in the period prescribed by its directional relationship and resistance to seismic waves without damaging its neighbor.



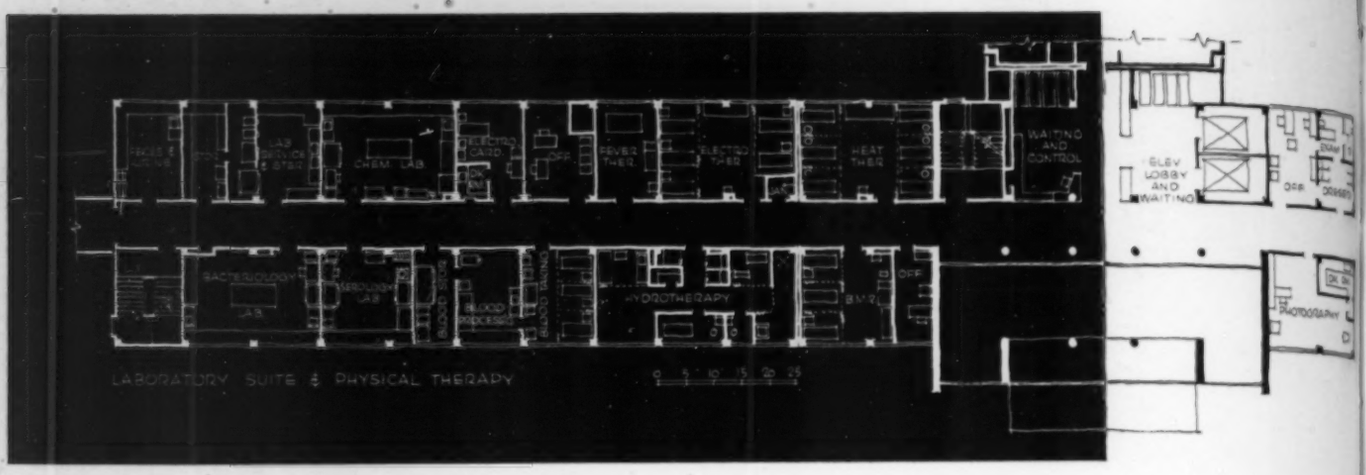
FOURTH FLOOR PLAN



SECOND FLOOR PLAN



THIRD FLOOR PLAN



Patient admission to the X-ray and adjunct service facilities is controlled by two waiting rooms. One, for out-patients, is at the head of the stair from the O.P.D. section and is divided into first and second class according to local custom. The other, for in-patients, is in the lobby at the point where the hospital connects with adjunct service station.

The principal Medical Center laboratories with the exception of pathology (in the necropsy unit) are located in this department. Separate small laboratories which operate on twenty-four hour service for routine analyses have been spotted on each floor in the rear central section of the General Hospital, in convenient relation to nursing units, and also in O.P.D., pediatrics and maternity units.

Electro-therapy, heat-therapy, hydro-therapy, cardio-therapy and basal metabolism facilities have been provided, as well as space for blood taking, processing and storage.

Pediatrics also has direct access to adjunct services.

X-ray unit is divided into diagnostic and therapeutic sections. Diagnostic facilities include two radiographic rooms (located either side of dark room, as local technicians preferred loading cassettes in dark room rather than control booths), a cystoscopic room, combination orthopedic and fluoroscopic room. Diagnostic rooms have dressing booths, toilet facilities, barium sinks between each pair.

Therapeutic section contains 140, 250, 400 KV equipment with necessary adjunct facilities.

A photography room with separate dark room has been included adjacent to the X-ray unit.

The Outpatient Department, located near public bus station, extends into the administration building to achieve close relationship with General Hospital admitting section to which many O.P.D. patients will be sent. This department is also connected by central stair to X-ray and adjunct facilities and is adjacent to social welfare section.

Combination control and cashier's desk faces entrance. New patients receive treatment form and pass directly ahead to history booths where rapid diagnosis and ability to pay are established. If diagnosis is not clear patient is directed to adjacent doctor's office for short physical exam. (Complete physicals are given in medical clinics.) Contagious disease cases are isolated immediately and dismissed at special exit. On leaving history and exam department, new patient passes cashier's desk, pays fees and proceeds to designated clinic. Patients already under treatment report to control desk, pay fees, and proceed directly to clinics.

In addition to the main waiting room, each clinic has its own waiting room across the corridor. This area in the north wing has raised ceiling for ventilation. Dental clinic includes small laboratory; surgical clinic has minor operating room with adjacent recuperation alcoves. V.D. clinic has separate examination and treatment sections. T.B. section is well isolated within the clinic area.

A dispensing pharmacy is located off the main entrance. A classroom for student demonstration has been provided.

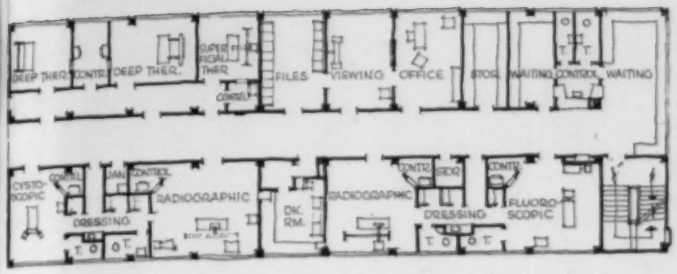
Local technicians considered air conditioning costly and impractical (no maintenance service available) for the operating rooms and central sterilization units. These sections were therefore located in the relatively pure air of the fourth floor. Mechanical extractors of explosive gases, however, have been placed over sub-sterilization area between each pair of operating rooms.

Elevators from surgical wards open to foyer which has direct access to: operating rooms; doctors' and nurses' locker rooms; central sterilization and supply; stair to students' observation gallery, which is formed by dropping slab over operating room corridors.

The operating suite is divided into two operation areas: six major operating rooms at the south end and three minor operating rooms, including fracture room, at the north end. The nursing supervisor's office is directly opposite the foyer entrance to the suite.

Central sterilization is a straight-line process. Unsterile materials are prepared, sterilized, placed in sterile storage, which serves both operating suite and rest of Medical Center with exception of maternity unit.

The central vertical service core serves operating sec-



0 5 10 15 20 25

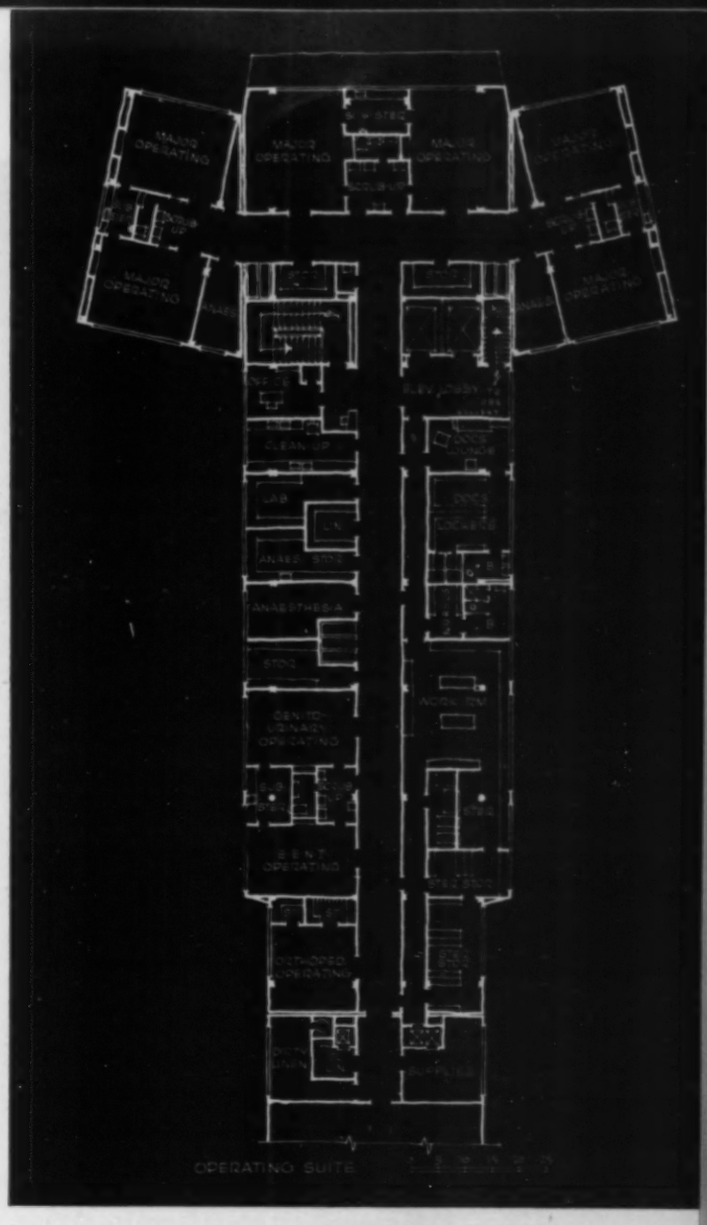
X-RAY, THERAPY & DIAGNOSTIC SUITE

SECOND FLOOR

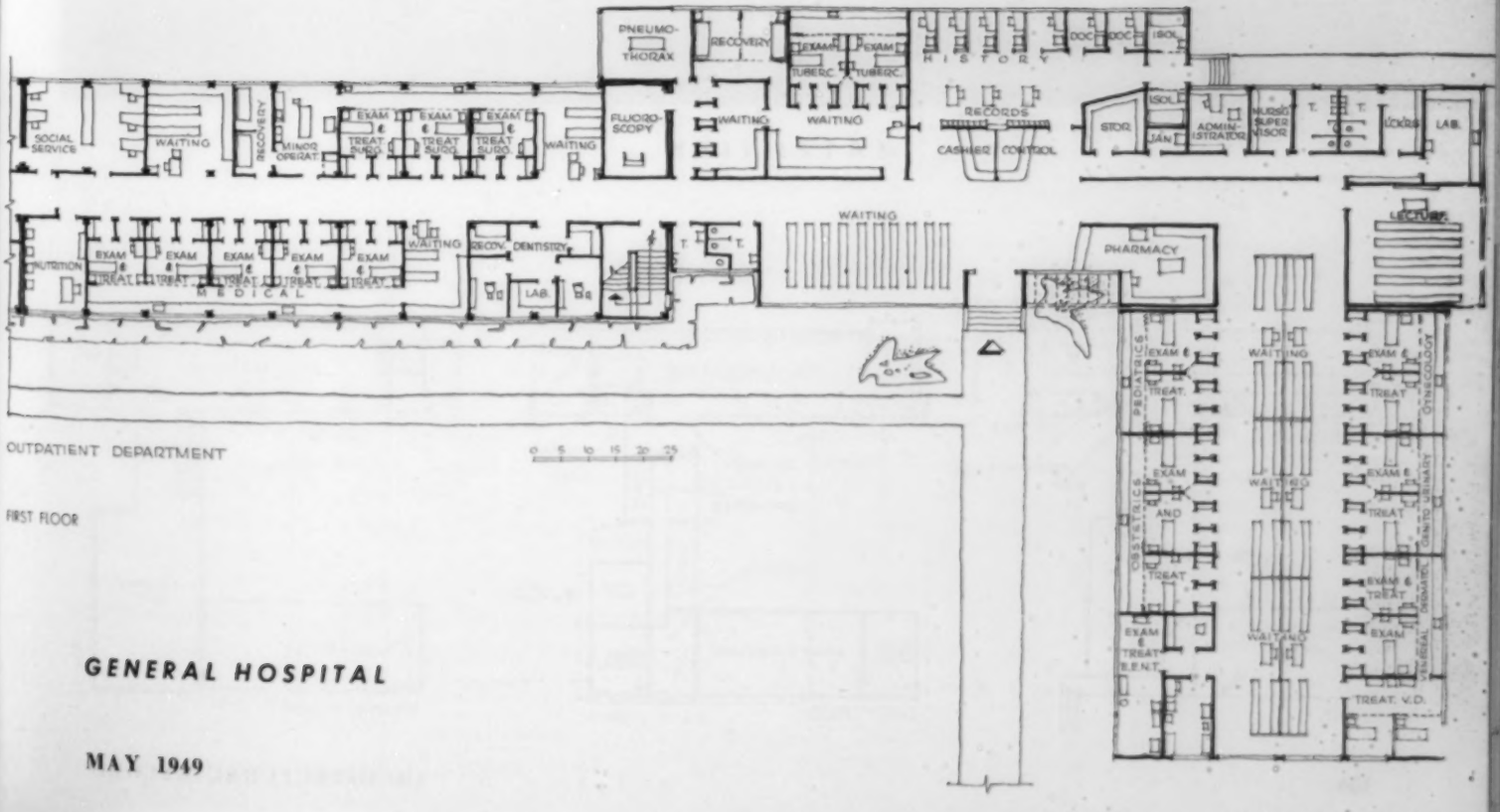
tion; thus sterile set-ups are dispensed by dumbwaiter; pharmaceuticals, solutions, and clean linens received.

No patient recovery section has been included on operating floor to avoid the expense in equipment and personnel of setting up a special nursing unit service. In compensation, specific rooms in the surgical wards have been provided with necessary equipment and will have trained personnel for patient recuperation.

MATERNITY cases probably run into greater danger from cross infection than any other class of patients. Thus the whole maternity unit has been physically isolated from the rest of the Medical Center group. Being a separate unit, it has taken the architectural form logically developed from the necessities of plan arrangement. The four principal wards are vertically super-



FOURTH FLOOR



OUTPATIENT DEPARTMENT

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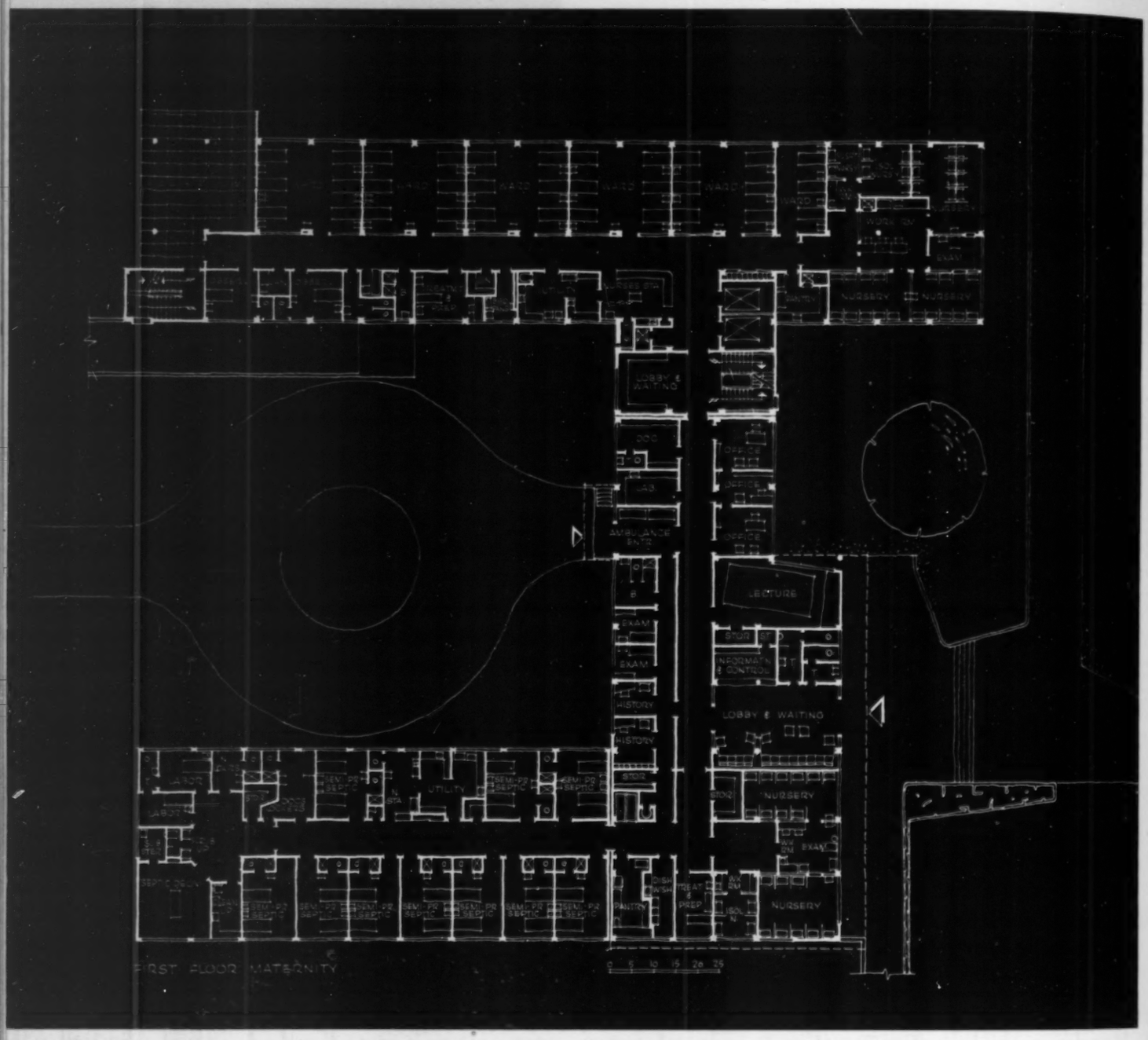
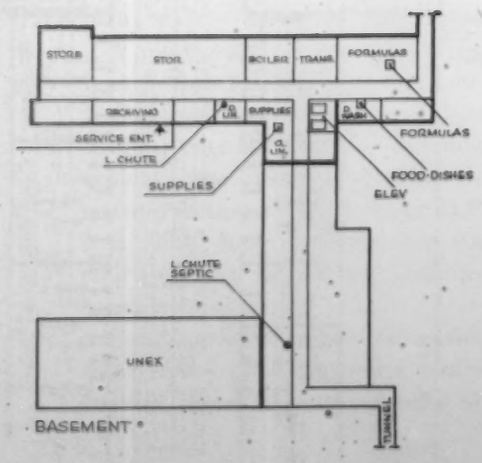
FIRST FLOOR

GENERAL HOSPITAL

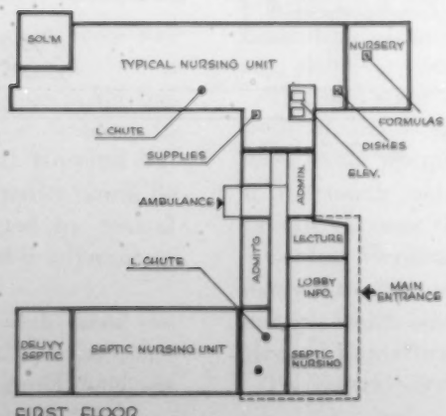
MAY 1949



MATERNITY



BASEMENT



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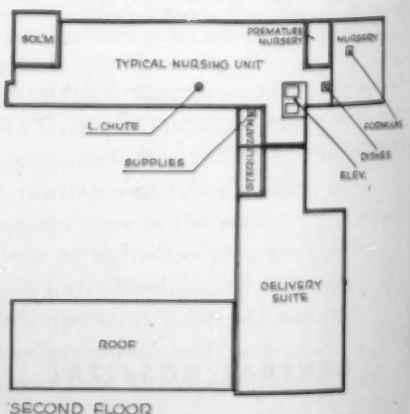
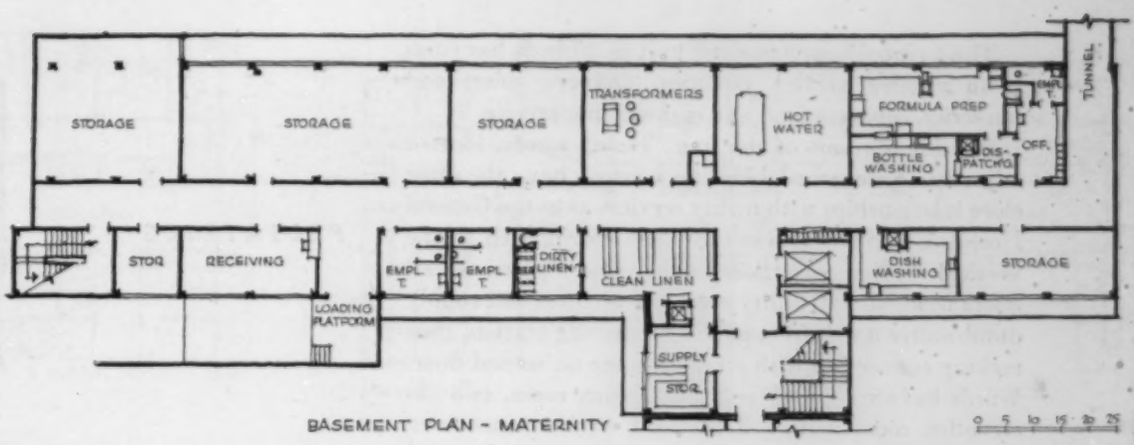
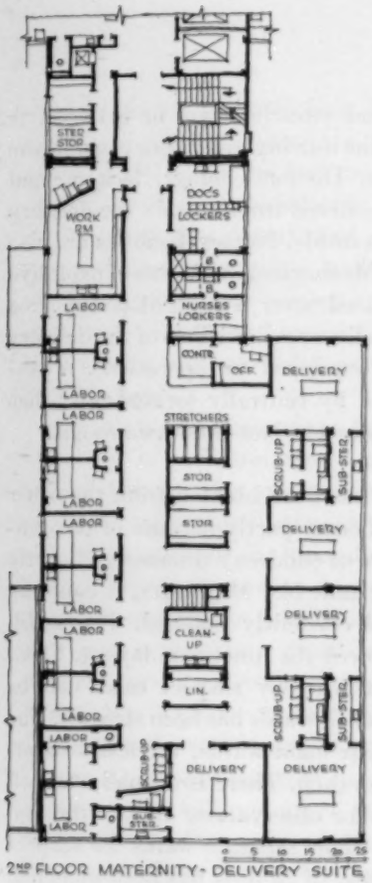


SECOND FLOOR

Basement plan shows relationship of formula room, clean linen and supply, soiled linen, dishwashing and store rooms to vertical service elements. Employees' sanitary facilities are provided. Employees' entrance, control, and locker rooms, however, are in the General Hospital



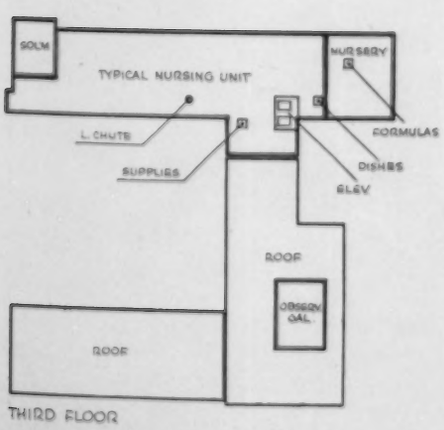
BASEMENT PLAN - MATERNITY



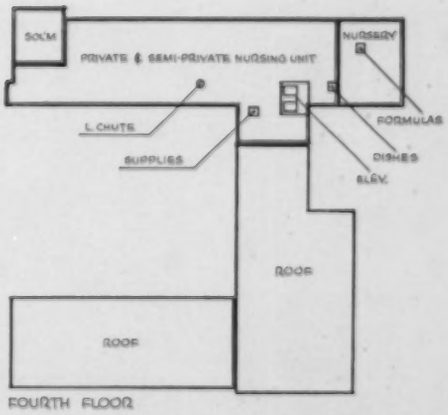
2ND FLOOR MATERNITY - DELIVERY SUITE

imposed; charity wards on the first three floors have 35 beds each; the private and semi-private nursing unit on the fourth floor has 22–25 beds. Nurseries are at the west end of each ward. "Clean" delivery section is on second floor over lobby and admission departments. Because of the ever-present infection danger precautions were taken in planning to isolate both mothers and infants of different categories and to control the traffic of patients, staff and visitors throughout the unit. There is a completely separated septic ward of 20 beds on the first floor. Total capacity of unit, 150 beds.

The admission department, with direct access from both the main entrance and ambulance entrance, has been equipped (as in the General Hospital and Pediatrics unit) to take care of not only registration but also complete physical examinations, as it is anticipated that the majority of patients will come to the hospital without previous medical consultation. Showers and toilets have been provided for patients who need those facilities before entering hospital. Septic cases will be sent directly to the septic ward near the admission section.



THIRD FLOOR



FOURTH FLOOR

The isolated septic nursing unit of 20 beds has complete nursing service facilities, delivery suite, and nurseries, separate food and dishwashing service.

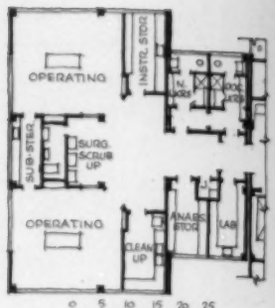
Nursing stations of the four "clean" wards, located adjacent to elevator lobbies for control, have the same close relationships with utility services as in the General Hospital. Nursing services are also coordinated to the vertical service core. Soiled linen chute opens on all floors from "dirty" utility room. Clean linen and supply dumbwaiter opens from alcove off nursing station, thus making connection with sterile storage on second floor. Wards have treatment and preparation room, two observation rooms with toilets. Food service comes from main kitchen in heated carts; trays are set up in ward kitchens; dishwashing is in basement.

In planning nurseries the now popular decentralized layout with bassinets adjacent to mothers' rooms was considered. This system was discarded because proper supervision by the few expert nurses available would have been more difficult and equipment needs would have increased. In contrast, nurseries have been laid out around one central work and control room. Formulas, prepared in the basement, are delivered by dumbwaiter. Infants are bathed and cared for in special individual bassinets. A doctors' examination room has been provided in each nursery area. Two separate nurseries for suspect cases and isolation cases have been provided. Premature nursery is on second floor convenient to delivery suite.

The delivery suite (page 137) for the "clean" nursing units is located on the second floor over the entrance lobby and admitting section. A separate central sterilization service has been provided to safeguard against cross infection. The adjacent dumbwaiter thus supplies sterile set-ups to the nursing units from sterile storage, and also services the delivery suite with pharmaceuticals, clean linen, solutions and other necessities from basement supply rooms.

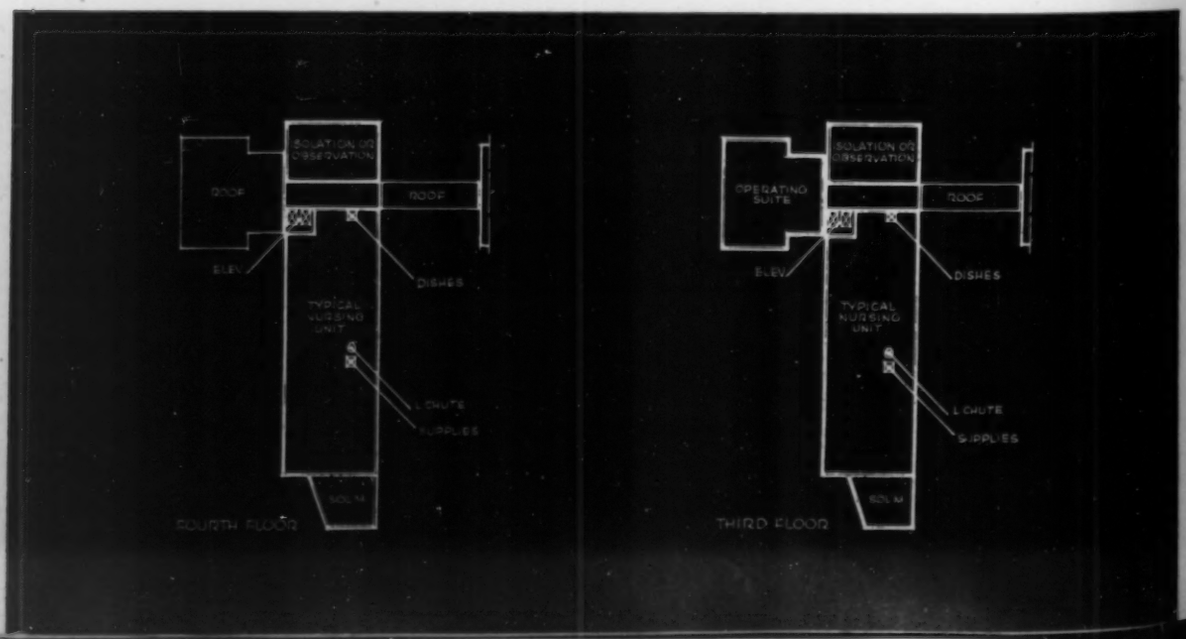
The double corridor scheme has been used in planning this section. There are ten labor rooms on one side of the unit and five delivery rooms on the opposite side. Service rooms for instruments, clean-up, anesthesia, linen and supplies, and stretchers are in between. A counter and office for the nursing supervisor controls the entrance to the suite. Doctors' lounge, lockers, and sanitary facilities are entered from outside the delivery section as well as from inside. Nurses' facilities are also conveniently located. Mechanical extractors of explosive gases have been placed over sub-sterilization area between each pair of delivery rooms. Two of the delivery rooms are completely equipped for operations. A students' gallery, reached by centrally located stair, has been planned for observation into these two rooms.

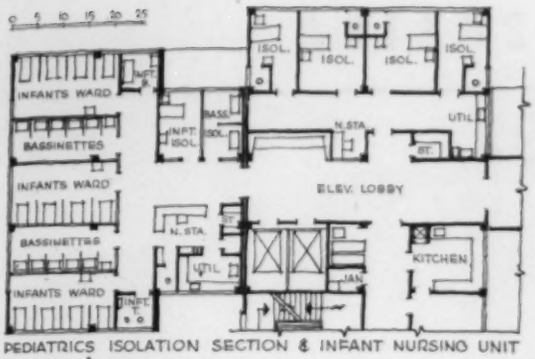
PEDIATRICS



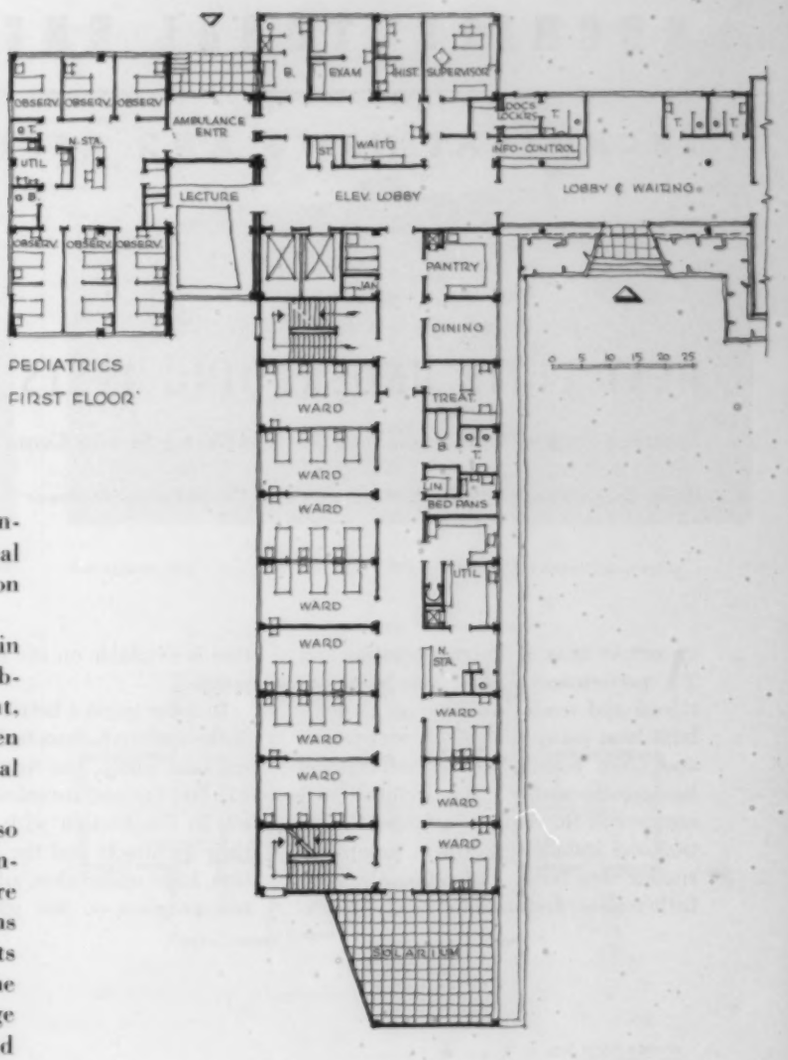
PEDIATRICS OPERATING SUITE
THIRD FLOOR

THE PEDIATRICS UNIT has been isolated from the other units of the Medical Center partly because of the generally infectious nature of children's diseases and partly because, as a separate unit like Maternity, it could be more successfully and efficiently planned. The architectural form has followed the functional layout. Flexibility of arrangement whereby suspect cases can be immediately isolated on all wards has been stressed. The unit is composed of four main wards, vertically superimposed, of 27 children each. There is a small ward off the admitting section for observation, and on the second, third and fourth floors separate wards for suspect cases. An infants' section of 25 beds has been included, and there is a small operating suite. Total normal





PEDIATRICS ISOLATION SECTION & INFANT NURSING UNIT
SECOND FLOOR

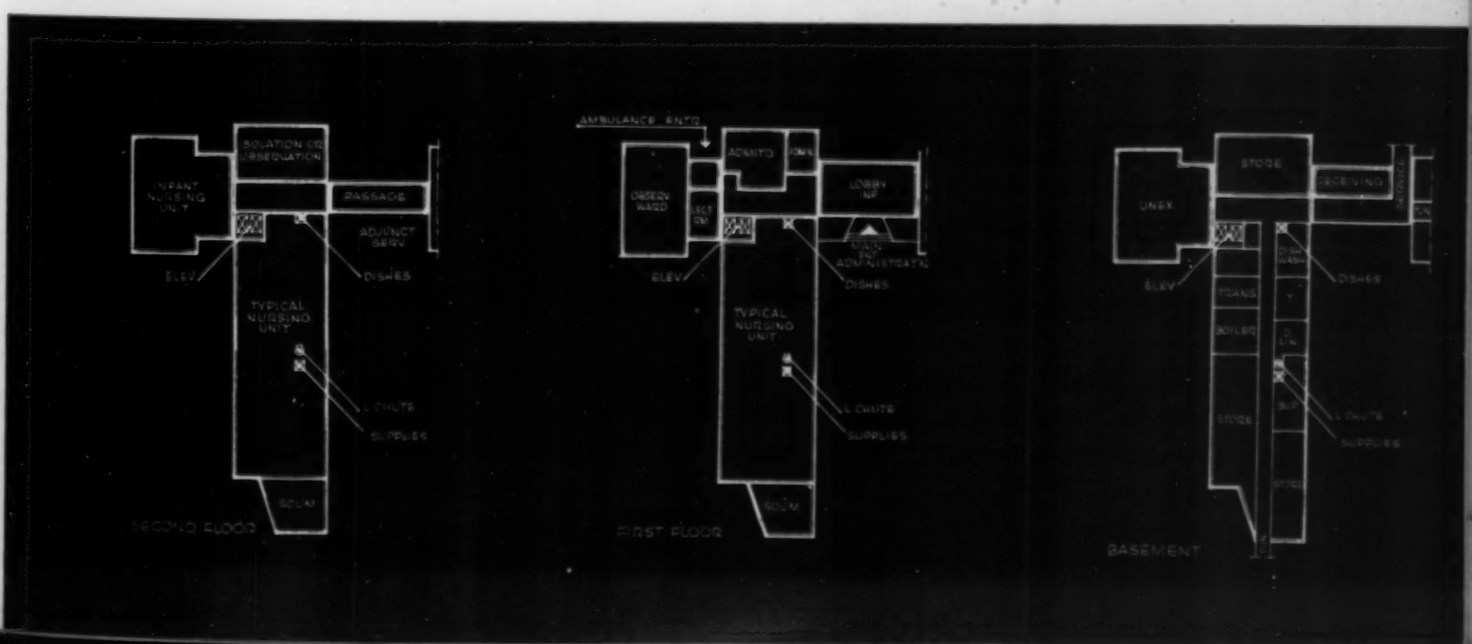


PEDIATRICS
FIRST FLOOR

capacity of the unit: 150 beds. Pediatrics is closely connected at basement level to the centralized medical center services; on the first floor to Administration; on the second floor to the adjunct services.

The admission department, adjacent to both main and ambulance entrances and convenient to the observation ward where suspect contagious cases are sent, has facilities for examinations and bathing. Children who develop contagious diseases are taken from hospital by ambulance.

The easy and convenient supervision of wards, so necessary in pediatric care, has been the prime consideration in nursing unit planning. Glass partitions are used in corridors and between rooms; nursing stations and utility services are located in exact center of units and in efficient relation to vertical service. Most of the children are placed in cubicles in 3-bed rooms. The large day room with safety glass balconies faces east and west for maximum sun in Guatemala's latitude. Ward food service is similar to maternity unit except for small dining room for ambulant children next to ward kitchen. Treatment room is situated just off ward so that complaining cases will not upset other children. Patients' clothes, as in other units of the Medical Center, after being washed are returned to special rooms on wards, given to patients when ready to leave the hospital.



HEAT PUMP UNDERGOING TESTS IN FIVE HOUSES

Research Program of the American Gas and Electric Service Corp., New York

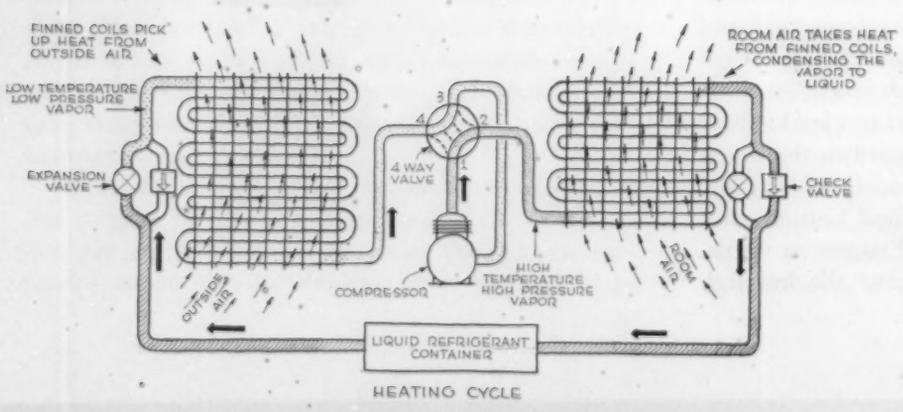
Philip Sporn, President; E. R. Ambrose, Air Conditioning Engineer

A GREAT DEAL of design, operating and performance data has been obtained and made available on custom-built heat pump systems in commercial and office buildings. This information has greatly assisted the architect and engineer in the design, equipment selection and installation of heat pumps for similar structures. Unfortunately, very little reliable and useful data of this nature is available on the residential heat pump.

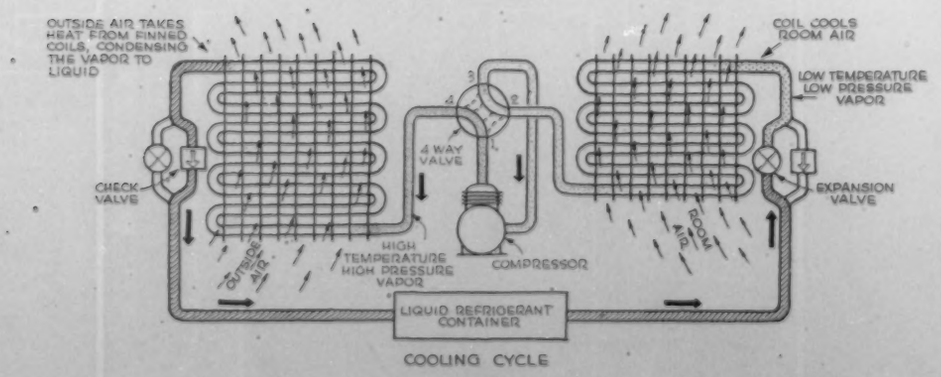
In order to get a better understanding of the various factors facing the residential heat pump, the American Gas and Electric Co. and its subsidiary companies, in cooperation with home owners, their architects and the York Corporation, have undertaken an extensive field test program on five pilot model residential heat pump systems. The trial installations were located in Kingsport, Tennessee; Abingdon, Virginia; Roanoke, Virginia; Coshocton, Ohio; and South Bend, Indiana in order to obtain maximum variation in the design requirements and to test thoroughly the units under radically different climatic conditions.

Tests were started in the fall of 1948 and will be continued until sufficient data has been taken to give an accurate picture of year 'round operation.

Before the five test houses are described, a discussion of the ten topmost questions asked by architects and engineers about the heat pump will be injected at this point to serve as a review of the basic principles of heat pump operation. This discussion will also include the reasons for the use of various heat sources, the possible variations in the distribution systems, some of the design requirements for defrosting, and the sort of information desired from the tests.



How the heat pump works, using outside air as a heat source in winter (above) and to remove heat in summer (below)



Questions on Heat Pump

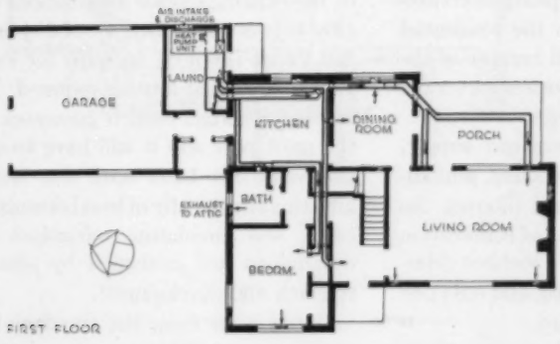
Some of the answers to the questions that follow have long been known, others have just recently been or are now in the process of being solved, while others must wait for further investigation and study. The ten questions are:

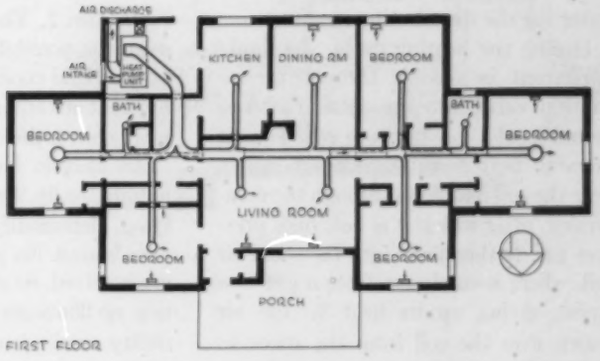
1. How does a heat pump operate?
2. What are the inherent advantages of a heat pump over the more conventional heating and cooling systems?
3. How is the selection of a practical heat source influenced by prevailing climatic conditions?
4. Where can the heat pump be located in the residence?

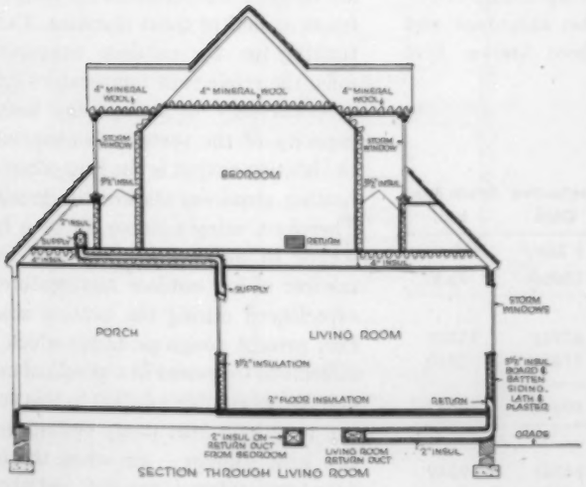
Ralph Lee Photo

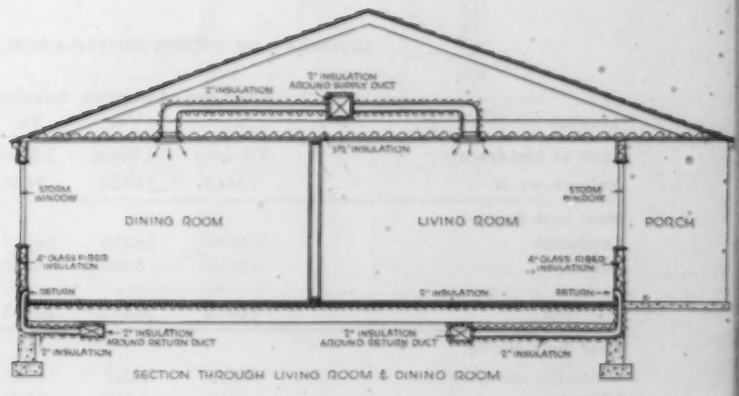
Kingsport, Tenn. Allen N. Dryden, Architect

Abingdon, Va. Virgil Odum, General Contractor









5. What are the design requirements for a satisfactory distribution system to and from the conditioned space?

6. Is frosting of the outdoor coil a problem when using air as the heat source?

7. Does the use of insulation and double windows materially improve the economic consideration for a heat pump system?

8. Is the installation and operating cost of a heat pump in a favorable position when compared with a conventional heating and cooling system?

9. What are the electric load characteristics of the residential heat pump and how do they fit in with those of other electric appliances in the home?

10. Are acceptable and satisfactory residential heat pump units available on the market?

Question 1. The heat pump is essentially a device which can extract heat from a low temperature source during

the winter and make it available at a higher, useful temperature for space heating.

In the summer, the refrigerant is used to cool the rooms, with the heat absorbed by the system being rejected to an outside medium.

The main parts of the heat pump system as shown on page 140 are the refrigerant and its container, a compressor and motor to drive it, expansion and check valves, four-way valve, and heat transfer coils which will be called outside air coil and room air coil for clarity.

In the following description, air has been used as the heat source and as the distributing medium to the conditioned space. Of course water or the ground can be used for the heat source and water for the distributing medium.

During the heating cycle, the liquid refrigerant in passing through an expansion valve into the outside air coil becomes cold, low pressure gas. Thus it extracts heat from outside air drawn over the coil and flows through the compressor, after which it is hot, high pressure gas. It then flows into the room air coil, where it condenses from a gas to a liquid, giving up its heat to the air drawn over the coil from the space to be heated.

During the cooling cycle, the liquid refrigerant expands to a cold, low pressure gas in the room air coil, cooling the air drawn over it. The gas is compressed and then flows into the outside air coil where it gives up heat to the air passing over the coil and is condensed to liquid.

The term coefficient of performance is commonly used to designate the efficiency of a heat pump system during the heating cycle. It is defined as the total useful heating effect produced divided by the heat equivalent of the work input:

$$\text{Coefficient of performance (cp)} = \frac{\text{Total useful heating effect produced (BTU/hr)}}{\text{Total watts input} \times 3.413}$$

The average coefficient of performance of a well-designed, present-day heat pump system will vary between 2.5 and 4.5 depending on the design, type, kind of equipment used, and on the operating conditions.

Question 2. The heat pump offers tremendous possibilities in the residential heating and cooling field because of the inherent advantages it possesses over the more conventional systems.

An electric heat pump can supply, automatically, heating, cooling, humidifying, dehumidifying, and filtering the year 'round. No products of combustion are involved, no odors, no soot, no chimney, no flame are required, and only one utility service is necessary.

Question 3. An ideal heat source may be defined as one which maintains a uniform year 'round temperature of 50–70F and which is also abundant and cheap. There are three known heat sources which may be applicable for the residential heat pump.

Well water throughout the United States usually meets the temperature requirements of the ideal heat source. Water is satisfactory, providing it is chemically suited (not requiring special metals or extensive treatment), and providing means can be found for its disposal after use. The chief disadvantage of water is the uncertainty of finding it in any given location. The cost of drilling the well and the maintenance cost of the well and pump further detract from its use in many areas.

Earth offers interesting possibilities as a heat source for the residential heat pump. Vertical or horizontal coils embedded in the earth may be used. Most of the existing ground installations employ between 120 linear ft. of 2½ in. to 450 linear ft. of ¾ in. pipe for every 12,000 Btu/hr of heating required. The amount of surface used is guesswork for the most part and it will have to continue on this basis until the factors affecting the transfer of heat between the earth and circulating refrigerant are determined and evaluated by planned research and development.

Outdoor air from the standpoint of availability and cheapness is an attractive heat source in those areas where the low outdoor temperatures are rather infrequent and of short duration. Unfortunately as the outdoor temperature falls, the refrigerant temperature drops proportionally to reduce the heating capacity of the system. Consequently, the heating output is the least when the heating requirements are the greatest. Therefore, using outdoor air as a heat source in areas where a considerable number of low outdoor temperatures is experienced during the heating season may present design problems which are difficult to overcome in a practical manner. An acceptable solution to this problem may be a heat pump system using two heat sources — air when the outdoor temperature is say 30F and above, and either the earth or water in combination with air when the outdoor temperature is below 30F.

Question 4. The heat pump unit can be located practically any place in a structure. It can be in the basement, in a utility room, or in an attic. If air is used as a heat source it should be adjacent to an exterior wall to permit the flow of outdoor air to and from the unit.

SUMMARY OF DESIGN INFORMATION

Location	Kingsport Tenn.	Abingdon Va.	Roanoke Va.	Coshocton Ohio	South Bend Ind.
Type of Residence	1½ Story	1 Story	2 Story	1 Story	1 Story
Volume, cu. ft.	16450	13550	9850	18000	9300
Heat Loss Btu/hr					
Conduction	29650	28336	24681	47968	38808
Infiltration	10350	8540	6200	11300	5860
Total	**40000**	**36876**	**30881**	**59268**	**44668**
Heat Gain Btu/hr					
Conduction and Sun Effect	30666	19262	14466	14241	19949
Infiltration	4260	3515	2550	4680	2405
Total	**34926**	**22777**	**17016**	**18921**	**22354**
Window Area to Total Wall Area in Per Cent	13.1	12.3	13.1	30.5	21.0
Total Normal Degree Days for Heating Season	3885	3980	4075	5535	6202
Heat Source	Air	Well Water, Air	Air	Air	Earth, Air

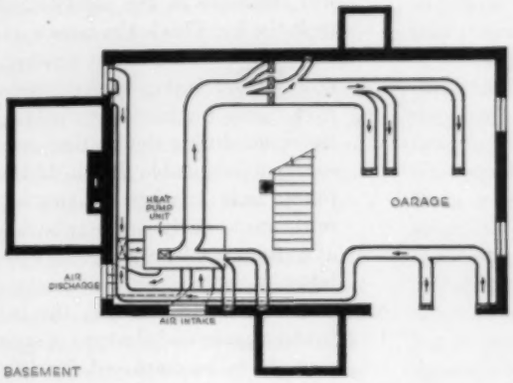
Design Conditions

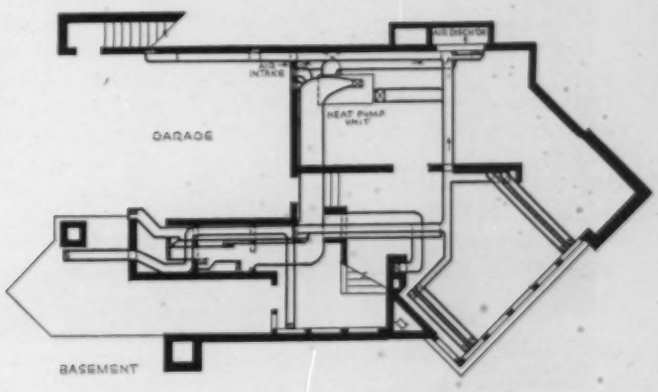
Heating: Outdoor Temperature 0F
Indoor Temperature 70F

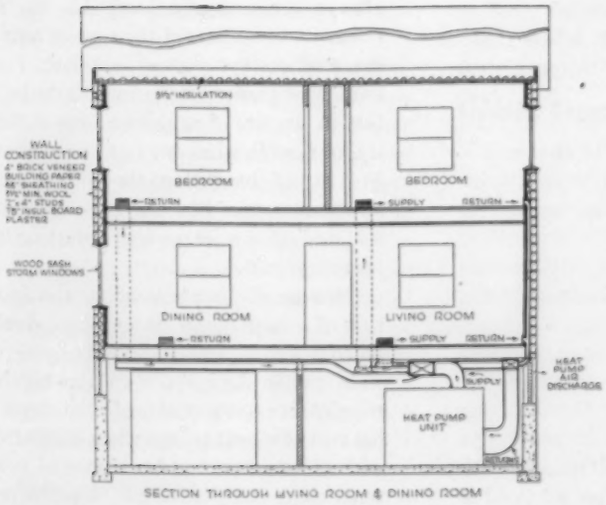
Cooling: Outdoor Temperature 95F DB and 75F WB
Indoor Temperature 80F DB and 67F WB

Roanoke, Va. J. C. Garnard, General Contractor

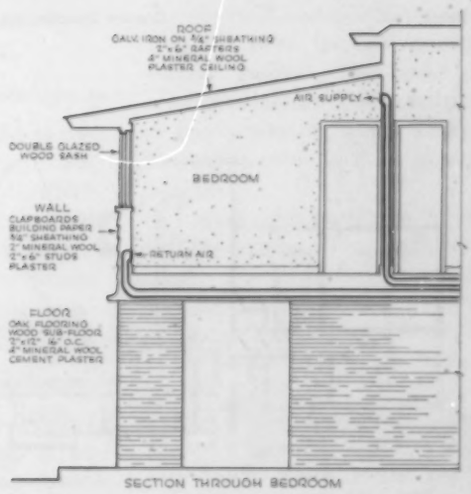
Coshocton, Ohio Tibbals-Crumley, Musson, Architects







SECTION THROUGH LIVING ROOM & DINING ROOM



SECTION THROUGH BEDROOM

Usually the type and design of distribution system selected will fix the location of the unit.

Question 5. Any well-designed distribution system suitable for a conventional heating and cooling installation is usually satisfactory for a heat pump, providing the heating requirement is not more than 1.5 times the cooling load. In a heat pump system the temperature of the heating medium is always kept as low as practicably possible (90–100F most desirable) since the coefficient of performance decreases as this temperature increases. It is often said that if the system is designed for conventional cooling it will be satisfactory for a year 'round heat pump system. This statement is usually true, since for most areas of the United States (except perhaps the northern section) the permissible heating-cooling load ratio stated above is seldom exceeded.

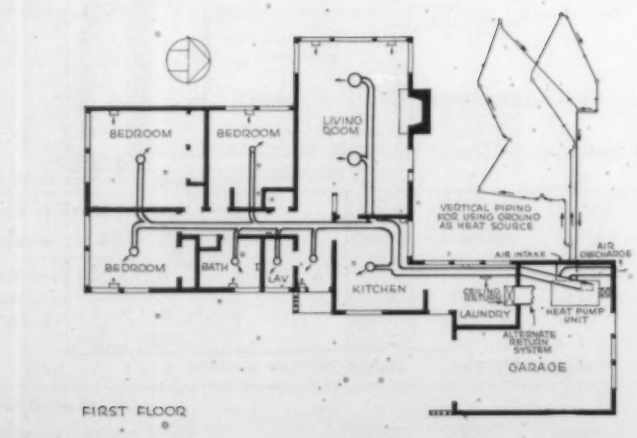
The size, location, and design of the supply and return grilles in a system where air is used as the heating and cooling medium depend to a great ex-

tent upon the structure under consideration. Present knowledge indicates that baseboard supply grilles, high sidewall supply grilles, and ceiling outlets can all be made to give satisfactory performance in a residential heat pump system.

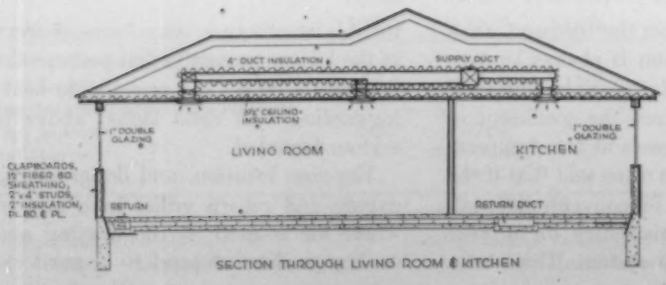
Tests and studies now under way will soon furnish additional information on this phase of the subject.

Question 6. There is a possibility of frost accumulation on the outdoor air coil when using air as a heat source at temperatures in the neighborhood of 32F and below.

South Bend, Ind. **Crown Development Co., Contractor**



FIRST FLOOR



SECTION THROUGH LIVING ROOM & KITCHEN

If periodic defrosting is not provided, ice will accumulate on the surface to a point where heat transfer between the air and the refrigerant will be seriously affected, causing a reduction in output and coefficient of performance.

There are several possible methods of automatically defrosting the outdoor coil. Possibly the most practical method for the 3 and 5 hp size residential heat pump is reversing the refrigerant flow so that the high temperature refrigerant will condense in the outdoor coil and melt the ice. This is the same cycle used for cooling during warm weather. Care must be exercised in using this defrosting cycle, since the blowing of cold air into the space during the heating cycle may cause objectionable drafts. If the heat pump unit consists of two separate refrigerant circuits one may be defrosted at a time thereby eliminating this possibility.

The cause of frosting, the best defrosting cycle, and the type of automatic controls to be employed for defrosting still need additional research and investigation.

Question 7. Double windows and a certain amount of insulation are almost always economically justifiable for a residence regardless of the type of heating and cooling system installed. For most heat pump installations the reduction in the size of equipment due to the use of double windows and as much as 3½ in. of insulation throughout the structure results in a lower overall first cost and up to a 50 per cent reduction in operation cost.

Question 8. Unquestionably the first cost of a heat pump system must come down before it can be expected to receive wide public acceptance in the highly competitive residential field. The operating cost of a heat pump, when compared with the fuel cost of conventional systems using coal, oil or gas, depends on the coefficient of performance obtained as well as the electrical energy cost and the fuel cost.

The well-designed heat pump of today having a good heat source probably would have an average coefficient of performance of 3.5. If the electrical rate is, say, 1½ cents per kwh, the heating cost would be equivalent to 12,000 Btu/hr coal costing $18 per ton, 550 Btu/cu. ft. gas costing 41 cents per 1000 cu. ft., 900 Btu/cu. ft. gas costing 64 cents per

(*Continued on page 182*)

FUNCTIONAL COLOR IN HOSPITALS

By Faber Birren, Color Consultant

While it is easy to become enthusiastic about the therapeutic values of color in the hospital, it is best to approach it with a generally conservative attitude. Indeed, one need not be overconfident as to direct *color therapy* to make out a good case for the studied use of color in the hospital, for obviously its *psychological values* are important enough in any place devoted to human care and convalescence, and there is no denying that color does have emotional appeal. Rightly used in a hospital, it can please the patient, create a mood favorable to recovery and generally improve the morale of both patients and staff.

Though color therapy is defensible, it is perhaps best not to get snarled in a medical argument, but rather to proceed to the use of color in terms agreeable to all. This is not to say that color should be used for merely esthetic considerations; it should be used rationally for functional purposes. And those purposes will be found to differ widely in the several different sections of the hospital.

The peculiar intricacies of hospital activities suggest that every application of color be technically correct, and that a vital regard for visual and physical comfort should come ahead of mere esthetic satisfaction. Almost anything would be better than the common white sterility of hospital rooms, but there are nevertheless some fundamental principles of color application that cannot be ignored.

From this background, here are some color specifications for the hospital that will serve as a general guide:

Color and Brightness

The use of color must, first of all, meet the commonly accepted specifications with respect to brightness contrasts. It is now generally understood that the eye objects to strong variations in brightness, and that the more nearly uniform are the brightnesses of surfaces and areas within the visual field, the greater the degree of visual comfort. One cannot ignore this simple principle in choosing colors for various hospital suites.

Colors that range in light reflectance from 60 per cent on walls to 25 per cent on floors, will usually be the best. If the reflectances go much above or below, the brightness contrasts will tend to become excessive.

The most important rule to bear in mind is that the color chosen for a particular surface be appropriate to its situation. This is more important than that the color be pleasing. It is not safe to select a group of colors and say that these shall be used because in general they are pleasing, or they are not distracting, or they come within the brightness range, or they do anything else. Even a distracting color may be appropriately used in certain areas, provided its use serves a desirable function.

Variety is also a general rule. Too much cheerfulness may become annoying, or monotony may serve to dull the appreciation for colors throughout the building. Variety is functionally useful also to prevent the building-up of any particular mood, to provide a psychological change of pace. This device seems to have universal appeal, and is particularly useful in areas where large numbers of people may be involved.

Lobbies, Reception Rooms, Solariums

The note of variety gives the key to decoration of lobbies, reception rooms, parlors and solariums, to any other public spaces. Choosing color sequences through the various rooms is an excellent method of avoiding any definite emotional reaction, which might be unfavorable as well as favorable.

Pale ivory or peach walls, for example, might be used in contrast with soft tones of green or blue, in floors, draperies, or furniture. Or soft greens or blues for walls might be accompanied by rose tones in furnishings.

For Darker Exposures

If the rooms are small or have no daylight it is often desirable to choose the warmer hues, with the cooler colors in the adjoining rooms. The alternate warming and cooling effects are, incidentally, good sequences; they avoid the frequent feeling of severity in hospitals, and tend to prevent excessive excitation or depression which might be found in less variegated color schemes.

Corridors and Stairs

Much the same rules apply to corridors and stairways. Here it is usually more important to compensate for the lack of natural light by using tones like yellow or peach. Both of these appear "sunny" and also have a tendency to lift the mood to something moderately aggressive.

Patient Areas

In the bed rooms it is a good color practice to keep the colors grayed a bit, so that they will never be too bright. Colors thus muted will be quite practical from the standpoint of maintenance by resisting soiling. More important, however, they will be restful, and will not be as distracting as the more impulsive hues.

It is a good general rule to make the ceilings a lighter tint of the same hue.

The use of warm or cool colors needs careful attention in the patient areas. It is good practice to pay less attention to the exposure of the room, and more to the expected condition of the patient. If the area is to be used primarily for chronic patients, the cooler, quieter colors are indicated. The warmer tones — peach, rose, or ivory — may be restricted to areas used for convalescent patients.

A good color on the cooler side is a soft blue-green. This color not only creates a cool and relaxing environment, but also tends to give a touch of pink to the patients, or his visitor, since it is the complement to the human complexion.

A second color, which also tends toward a pleasant, flattering glow, is a soft peach, which is the tint of the complexion itself. It is a moderately cheerful color, and has the apparent effect of increasing the dimensions of a small room.

Another useful color is a soft pearl-gray. This is a perfect foil for most of the other colors, and can give very beautiful effects when used with good notes of contrast. Delicate, multi-colored drapes would be a likely suggestion, or there could be quite a bit of color in furniture or flooring.

It is well to remember, in this whole

matter of color, that rooms are color-conditioned by their lighting. Lower levels of light tend toward restfulness, while brighter illumination adds to the stimulation of any color combination.

Operating Rooms

Large expanses of sterile white may suggest the chemical, aseptic quality of an operating room, but it is very trying on the eyes of surgeons and nurses who are engaged in very delicate tasks. A soft blue-green will be much more functional.

It would not be amiss here to quote a recent release of the Du Pont Company: "The first major Du Pont experiment in functional hospital painting took place over 20 years ago. At that time, the company recommended the use of Eye Rest Green for the operating rooms of a New York hospital. The purpose of this color was to relieve the surgeon's eyes from the glare of the traditional glossy white walls. It was found that green created a softer and more uniform seeing condition. A third benefit was noted when seeing was found to be more acute for delicate surgical manipulation when a bluish green wall color served directly to complement the red hue of human tissue."

Nurses' Areas

In the nurses' station something more aggressive might well be employed. It might be pale yellow, or peach would also be suitable.

Utility rooms, linen rooms, nourishment kitchens and so on could be done in good old clean white, provided that occupancy was not expected to be prolonged. If it were, it would be better to go back to pale green or blue-green.

In the nurses' home, the interior decorator might have his day, although even here there should not be radical departure from the principles of functional color. Women are known to be prone to rose tones, which would be nice for parlors or bed rooms. Peach is an "appetizing" hue for the dining room, and is also a favorite with women. It could be relieved by blue in furnishings and drapes.

For High Temperatures

In rooms where the temperature is likely to get rather high — X-ray, physical therapy, laundry — blue-green will have a cooling effect.

Where there is no especial occupancy condition to dictate color requirements, the color choice may be guided by room orientation — ivory for north or east exposures, gray or green for south and west.

Conferences and Classrooms

Classrooms or conference rooms usually lend themselves well to the end wall treatment. The end wall, faced by the students, might be in a medium tone of green or blue, to cut down glare and relieve the eyes, also to build up a higher visibility for charts or demonstrations to be seen by the audience. The side and rear walls would be done in something light, ivory perhaps, for better light reflectance.

The end-wall device has other applications. In laboratories where critical seeing tasks are performed, the deeper tone of an end wall would give the eyes a chance to rest occasionally.

Or, a livelier color, such as yellow, would be good for the end wall of some dark space.

Out-patient Department

A light pearl gray is ideal for waiting rooms, but it should be relieved by some colorful touches in decorations. Dressing rooms and toilets may be in peach, to tint the face of the patient with a healthful glow. Examining rooms or treatment rooms are best done in blue-green, as in the operating suite.

Avoid Too Much Blue

In the hospital it is a good general rule to avoid too much blue, especially in large areas. It is known to have a depressing effect, and many persons seem to have trouble in seeing well in a room predominating in blue tones. This despite the fact that blue is a rather popular color. It is good therefore, to use some blue, but in comparatively small quantities.

Psychology of Color

All of these suggestions will be found to take account of the general principles of color as human beings react to it.

In the main, colors are associated with two moods — the warm, active, exciting qualities of red and its associated hues, or the cool, passive, calming qualities of blue, violet and green. Also light colors are active, deep colors are passive. Beyond the feeling of warmth or coolness, brightness or dimness, the exact choice of a hue or tone is fairly optional.

Pure colors, however, are likely to be severe. Too much of any one color will prove distressing.

Still more pronounced in the moods associated with color are those induced by chromatic lights — greens and blues that turn the lips black and give the flesh a cadaverous aspect. In green light the mere sight of a person's face may be revolting; green light has been thrown on criminals in a mirrored room, to force a confession.

Reactions to color are not, however, always consistent. Colors may have quite contradictory effects. Green is a good example — as seen objectively it is cool, fresh, clear, pleasing; but the green light shining on human flesh causes a subjective reaction that instantly makes it repulsive.

The warm colors are not so subject to this difference. Red, however, may seem much more intense as applied to one's self than to external objects. Blues and greens which appear peaceful in one aspect may be terrifying in another.

Red light has a tendency to quicken a person's reactions, while green light retards the response.

D. B. Harmon has observed that most living things tend to orient themselves toward light or toward brightness. Also, as the energy of stimulation goes up, response tendency goes with it. In his opinion, therefore, bright environments will condition the organism for what he calls avoidant (big muscle) activity. On the other hand, brilliance may hinder more sedentary tasks. This would suggest a number of conclusions. Activities of a muscular nature are better performed in bright light and amid bright surroundings. Exacting mental and visual tasks are better performed with softer and deeper colors in the environment, though with ample illumination over the task itself.

One of the most stimulating of all writers on the psychological aspects of color is Kurt Goldstein. "Life is a condition alternating between excitation, destruction, and unbalance, and reorganization, equilibrium and rest. In the course of life colors play their role. Each color has a special importance and all colors together help to guarantee normal life."

Not a bad comment on the use of color in hospitals.

CABINETWORK DETAILS

Based on information from Nuroco Woodwork, New Rochelle, N. Y.

THE amount of woodwork and cabinetwork used in contemporary building, particularly residences, has increased by such leaps and bounds that it often constitutes one of the largest dollar outlays in a new house. A knowledge of standard modern woodworking practices, therefore, should not only stimulate design, but should be a means of exploiting valuable technical economies and eliciting fair and comparable estimates from woodworking contractors.

WOODWORK TRENDS

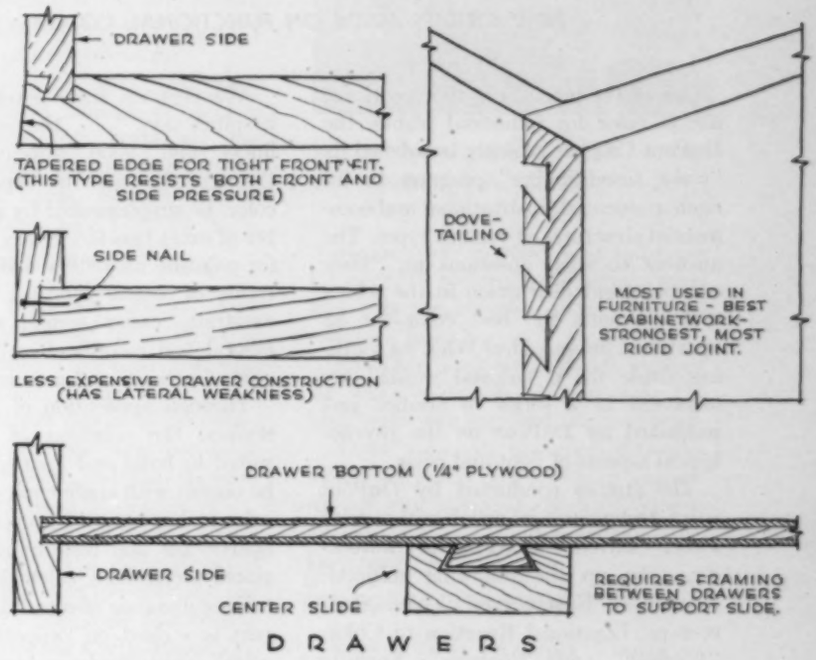
Four principal factors account for the great increase in residential woodwork since 1940. They are: (1) greater use of glass (accompanied by a more widespread use of jalousies, blinds and louvers); (2) the open-closed plan (when achieved by means of light, flexible walls of rolling, sliding or folding doors or wood panels); (3) built-in furniture and storage; and (4) a swing towards more natural interior finishes and greater texturing of interior surfaces.

Some traditional woodwork forms are undergoing change — trim is being simplified and emboldened in scale. The fussy classic mantel is being replaced by simpler wood frames that are more in scale with clean-lined contemporary furniture. Stair rails, balusters and newels are being given more unconventional expression. Some old forms have almost disappeared — false ceiling beams, the awesome front doorway and porchwork with its columnar dignity.

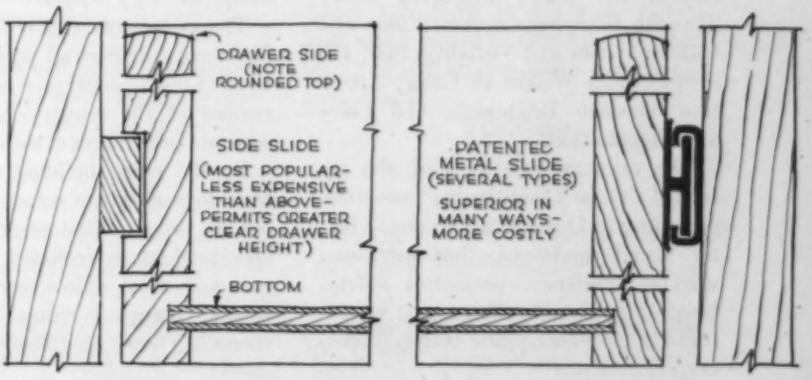
Woodwork trim, in other words, is going to work. The hackneyed melange of moldings which used to surround doors and windows indiscriminately is being replaced by moldings with more architectural effectiveness. Doorways "on ax" may be given bold-scale trim for emphasis; secondary doors, simply functional hairline moldings for impact- and wear-resistance. As in all phases of design, there is less orthodoxy than ever before.

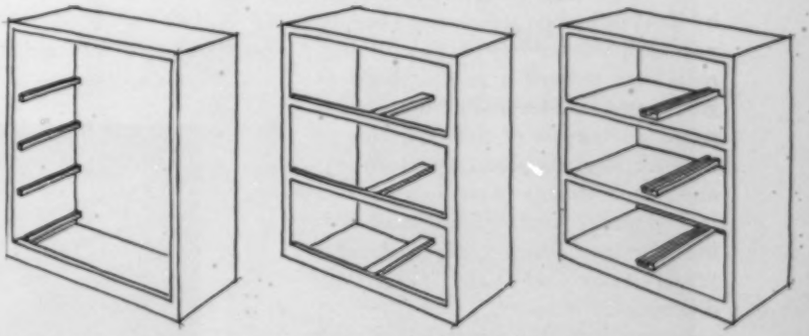
The technique of woodwork manufacture has been changed only by the more common use of plywoods and

(*Continued on page 153*)


DRAWER SIDE
TAPERED EDGE FOR TIGHT FRONT FIT. (THIS TYPE RESISTS BOTH FRONT AND SIDE PRESSURE)
SIDE NAIL
LESS EXPENSIVE DRAWER CONSTRUCTION (HAS LATERAL WEAKNESS)
DOVE-TAILING
MOST USED IN FURNITURE - BEST CABINETWORK- STRONGEST, MOST RIGID JOINT.
DRAWER BOTTOM (¼" PLYWOOD)
DRAWER SIDE
CENTER SLIDE
REQUIRES FRAMING BETWEEN DRAWERS TO SUPPORT SLIDE.

DRAWERS


DRAWER SIDE (NOTE ROUNDED TOP)
SIDE SLIDE (MOST POPULAR- LESS EXPENSIVE THAN ABOVE- PERMITS GREATER CLEAR DRAWER HEIGHT)
BOTTOM
PATENTED METAL SLIDE (SEVERAL TYPES) SUPERIOR IN MANY WAYS- MORE COSTLY



LEAST EXPENSIVE. PERMITS SIDE SLIDES ONLY. ALLOWS MAXIMUM DRAWER DEPTH.

OPEN FRAME PERMITS USE OF CENTER SLIDES OR SIDE SLIDES. FRONT FRAMING STIFFENS CONSTRUCTION BUT REDUCES DRAWER HEIGHT, CREATES AN EDGE WHICH MAY SNAG DRAWER CONTENTS.

DUST TIGHT. PERMITS USE OF CENTER OR SIDE SLIDES USED IN BEST DRAWER CONSTRUCTION. SOLID SHELF PREVENTS SNAGGING OF DRAWER CONTENTS.

CHESTS

PRODUCTS for Better Building

NEW STUDIES MADE ON FUNCTIONAL COLOR

One of the pioneers in the functional use of color for industrial plants, the DuPont Co., has recently broadened its "Color Conditioning" program to include residential, institutional and commercial structures of various types. The answers to such questions as, "How can paint cut distraction in the school room? What's the best color for an apartment house lobby? What's a soothing shade for a hospital ward?" are answered in a series of studies just published by DuPont on the psychological aspects of light and color.

The studies conducted by DuPont paint technicians in collaboration with Faber Birren, noted color authority, take up the following subjects: Brightness Engineering; Color Preferences; Emotional Reaction to Color; "Warmth" and "Coolness"; Appetite Appeal in Color; Featuring Color Through Complementation; Color and Climate; Color and Visibility; Size, Dimension and Weight in Color; Attention Through Brightness; and Color and Illumination.

The primary objectives of the extended "Color Conditioning" program, according to DuPont, are to create better visual conditions, thus increasing working efficiency, promoting safety, building good will with tenants or customers, and encouraging better "housekeeping."

The idea behind "Color Conditioning" by DuPont had its genesis some twenty years ago when a New York operating room was painted a restful shade of green instead of traditional white. This suggested the use of color selection to improve seeing conditions in industry, and research along those lines resulted in DuPont's "Three Dimensional Seeing" for the painting of machinery; "Safety Color Code," and "Color Conditioning for Industry."

Research on the psychological and functional aspects of color have been used to establish "Color Conditioning" specifications for hospitals, stores, hotels, apartments, restaurants, schools and offices.

A report on color conditioning for hospitals says, ". . . the need for cleanliness and good appearance may, through the scientific application of color, be supplemented by a large number of extra benefits. Every expenditure for painting may show added values in terms of better lighting, relief from eyestrain, easier seeing, and a finer mental and emotional attitude on the part of patients and personnel."

Through application of the research studies, the selection of colors best suited to hotel and apartment use can be chosen with confidence, according to color technicians. The report on hotels, apartments and restaurants covers regional preferences, color principles, obtaining dynamic effects. Also in this report is a chart on "appetite appeal in color" which grades colors from "very tasty" to "very repulsive."

The system of "Color Conditioning" for stores considers all possible alternatives of color preferences of the various regions of the country, and also the separate preferences of men and women.

In the office building category, at least four alternate color combinations for the private office are given. Similar specifications are included for reception rooms, general offices, corridors, wash rooms, conference rooms, and drafting rooms. These specifications provide choices for building in various climates, or with different lighting problems.

The specifications of colors to be used in schools are designed to provide maximum light reflectance, create comfortable seeing conditions, and provide cheerful surroundings.

The studies on psychological aspects of light and color and the "Color Conditioning" specifications have been made available in a series of 4-page reports. E. I. duPont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Del.

ALUMINUM FURNITURE FOR SCHOOLS

School furniture that combines light aluminum alloy and laminated wood in a wide range of functional designs has now been introduced in the American market.

Production of the line originated in postwar Great Britain, and the difficulties created by material shortages were in part responsible for innovations in methods and materials which have produced an attractive and unusual line.

Production is achieved by means of pressure die casting of such accuracy as to require little further treatment prior to being welded and finished before final assembly. A hygienic, scratch-proof finish is applied by a new process to the metal parts.

The line includes several designs in desks and chairs, including "nesting" desks and chairs which permit vertical stacking for space economy in storage. Knoll Associates, Inc., 601 Madison Ave., New York, N. Y.

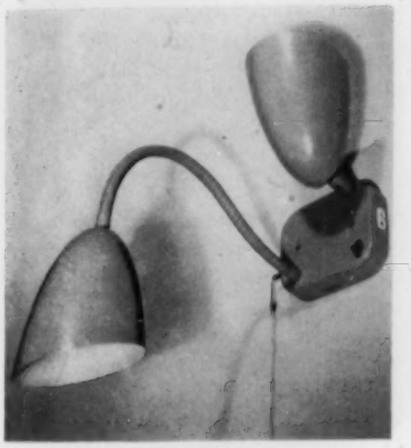
Light aluminum alloy and laminated wood comprise this functional school furniture. Included in the designs are "nesting" chairs, tables, allowing vertical stacking for storage. Metal parts are finished with a scratch-proof coating

HOSPITAL LIGHTING

A multi-purpose fixture, precision-constructed of heavy-gauge steel and finished in baked enamel, the *Hospitality Light* (No. 9102) is reported to meet every requirement for safe, efficient, comfortable and economical hospital room lighting.

A swiveled reflector is used for indirect lighting, and, swiveled down, also serves as a medical examination light. A night light is mounted inside the housing, with a slot controlling the beam in a fan-shaped pattern parallel to the wall, without casting any direct light on the patient or the bed.

A convenience outlet is adaptable for



This hospital light fixture has a goose-neck lamp for reading, swiveled lamp for indirect light, and houses a night light

operation of a radio, therapeutic device, or electrical appliance. The Hospitality Light features plug-in installation, with heavy-duty four-pronged plug and receptacle. Kurt Versen Co., Englewood, N. J.

CONCRETE HOUSES

Standard American road-building technique will be applied in a newly developed system for construction of concrete houses to be used for the first time in a low-rent housing project in Norfolk, Va.

A series of concrete slabs will first be poured in a long row like detached sidewalk blocks, but large enough to become floors and roofs. After the slabs have set, a mechanized wall form will be placed by a crane on the first of the slabs and concrete poured to the full height of the walls.

When the walls of the first house are poured, the wall form will be moved to the third slab, where the process will be repeated. After the concrete has set, the second and fourth slabs will be raised by a patented vacuum lifting mechanism to form the roofs of their neighboring structures.

Use of the concrete aggregate, Solite, is intended to provide insulation and fire protection, as well as the permanence of conventional concrete. Standard heavy construction equipment is used in preparation of the site, placing of roads and grading and in placing a concrete slab on each house site.

This method is described as economical for large-scale housing projects in localities where land costs are low enough to permit one-story structures. Ibec Housing Corp., Room 5117, 30 Rockefeller Plaza, New York 20, N. Y.

WOOD VENEER PANELS

Parkwood Decorative Prima Vera Panels are now offered in a variety of finishes including Tigerwood and Elm in units up to 8 ft. in length.

The wood veneer panels are described as having an effective combination of natural wood luster and the abrasion resistance of the toughest in plastics.

Both natural wood and colored panels are manufactured in a cigarette-proof grade and are reported to withstand the usual household chemicals and boiling water. The Parkwood Corp., Wakefield, Mass.

ALUMINUM NAILS

For use where nail heads are exposed to the weather and where unsightly rust is objectionable, *Never-Stain Aluminum Nails* are made in many sizes and types for use with roofing, wood siding, wood and asbestos shingles, dry-wall board and rock lath.

Wood veneer panels used in this room combine luster, abrasion resistance

An etched finish is reported to increase the nail's holding power and make the head surface an excellent painting bond.

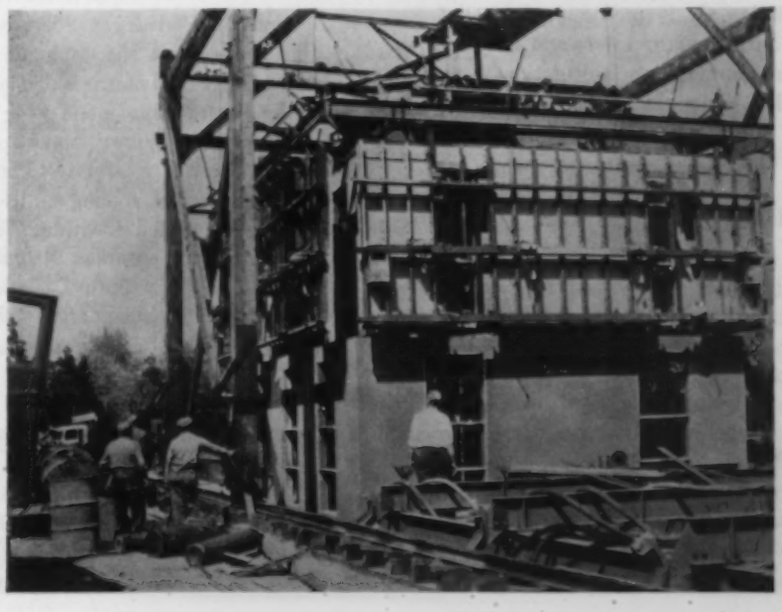
Never-Stain nails are reported to save money since they do not require countersinking and puttying. Nichols Wire & Aluminum Co., 1725 Rockingham Rd., Davenport, Ia.

SPONGE-BACKED CARPETING

A specially-woven carpet of imported wool pile, the *Royl-Aire Cushion Carpet*, comes vulcanized to a sponge rubber base which is said to eliminate the need for a rug pad besides giving greatly extended wear.

(*Continued on page 186*)

Road building equipment has been turned to use in a new method for building concrete houses. Wall forms are shown being lifted from an experimental house



MANUFACTURERS' LITERATURE

Roofing

Basic Application Data, Monel Roofing Sheet. This data sheet on Monel roofing, noted for its corrosion resistance, takes up indicated uses, characteristics and properties, installation tips, cost and availability and specifications. Listed are suggested gauges for principal exterior building applications of the recently introduced, soft-temper, Monel roofing sheet. 4 pp., The International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.

Lighting

(1) Cold Cathode Fluorescent Lighting (Publication 10); (2) How to Install Cold Cathode Fluorescent Lighting (Publ. 40). The first is a manual of technical data on cold cathode lamps. It tells what the cold cathode lamp is, how it is used and gives an explanation of auxiliary equipment. The second is a brochure explaining, in eight simple steps, the correct procedure for installing cold cathode lighting systems. 12 and 2 pp. The Fluorescent Lighting Assn., 501 5th Ave., New York 17, N. Y.

Fundamentals of Light and Lighting. Comprehensive bulletin takes up the nature and physics of light, its measurement, methods of control, characteristics of materials used in lighting equipment and the principles of illumination design. It is profusely illustrated and contains many tables and graphs to aid in illumination calculations. 86 pp., illus. General Electric, Engineering Div., Lamp Dept., Nela Park, Cleveland 12, Ohio. *$1.00.**

Glass Block

Daylight in Your Home. Photos and drawings demonstrate the various sections of residences that can utilize glass block for such features as light transmission, insulation, permanence, privacy and beauty. Suggested installations are shown for stairs, entrances, living and dining rooms, kitchens, closets, bathrooms, basements and garages. Another portion of the booklet explains the set-in-wood method of installing Insulux Glass Block without the use of mortar. Typical details as well as instructions for installation of mortar-set panels are included. 20 pp., illus. American Structural Products Co., Toledo 1, Ohio.*

Swimming Pool Equipment

Permutit Swimming Pool Equipment (No. 2157). Describes equipment for recirculation, filtration, chlorination, softening and pH control of swimming pool water. Drawings showing space requirements are given for different systems of recirculation and purification equipment. A complete line of accessories such as suction cleaners, heaters and test kits is described. Some installations are pictured and specifications are included. 28 pp., illus. The Permutit Co., 330 W. 42nd St., New York 18, N. Y.*

House Ventilation

West Wind Ventilation for Modern Housing. Pictures and describes a line of fans for use in kitchens, laundry rooms, recreation rooms and offices. There are models for installation in walls, ceilings or windows. Special features such as louvers, provisions for cleaning, and speed control are covered. Installation details are given. 14 pp., illus. West Wind Corp., 1800 Airport Way, Seattle 4, Wash.

Welding Gun

Nelson Stud Welding. Picture-paragraphs cover what the stud gun does, how it operates, advantages, typical applications and equipment. A wide range of special studs is shown. Some applications of interest to architects include the installation of roofing and siding, insulation, insulated sheathing, furring and nailing strips, sprinkler systems and pipes, conduit and wireways. 8 pp., illus. Nelson Stud Welding Div., Morton Gregory Corp., Lorain, Ohio.

Decorative Metal

Nickeloid Sampler and File Folder. A letter-size folder containing samples of Nickeloid metals finished in chrome, copper, nickel and brass which are available on zinc, steel, copper, brass and aluminum bases. In addition to actual samples in bright and satin finishes, striped and crimp designs, complete data is given on the sizes of sheets, coils and flat strips available. There is other information on gauges, tempers, finishes, protective coatings and tints. 4 pp. American Nickeloid Co., Peru, Ill.

Inked Lettering

Lettering. Gives illustrated, historical description of the origin and growth of writing. Describes lettering with brush and pen with numerous examples of personal alphabets and type design. A high spot of the book, according to the publisher, is the section on engrossing illuminated manuscripts. This is a complete revision of Higgins former book "Script and Manuscript." 54 pp., illus. Higgins Ink Co., Inc., 271 9th St., Brooklyn 15, N. Y. *$1.00.*

Movable Walls

Mills Metal Partitions (Catalog No. 49-C). Discusses the inherent advantages of movable metal partitions for office, commercial, industrial and institutional buildings. Among the features taken up are economy, design, structural stability, adaptability to changing space needs, sound control and provisions for easy wiring. Installation and construction photographs as well as detail drawings are included, and specifications are given. Accessories are also included. 56 pp. illus. The Mills Co., 975 Wayside Rd., Cleveland 10, Ohio.*

Air Conditioning

A Dream of Green Air. Describes the *Dorex* method of air recovery, how stale air can be made fresh through use of activated carbon. The bulletin lists savings (investment and operating) that can be expected when Dorex is used. 14 pp., illus. W. B. Connor Engr. Corp., 114 E. 32nd St., New York 16, N. Y.

Estimating Plywood Sizes

Davis Plywood Quick Estimating Chart. Time-saving chart to compute the most economical stock plywood panel sizes to use. The chart gives the number of inches of waste for panels made from various stock sizes. 2 pp. Davis Plywood Corp., 12555 Berea Rd., Cleveland 11, Ohio.

Hot Water System

Janitrol Triple Service Hot Water Heating Systems. Pictures a number of residences in which Janitrol units have

(*Continued on page 200*)

*Other product information in Sweet's File, 1949.

GROVER

Definitely ONE of the Keys to Efficient, Modern Hospital Operation

Here's the compact, though great, University of Michigan Hospital at Ann Arbor in which, since 1932, GROVER equipment has helped expedite and control routine operation.

All routine inter-departmental communication in hospitals—and *what* a lot of it there is with reception data, case histories, diets, pharmacy requisitions, supplies, patient accounts, prescriptions, etc.—all these are swiftly, silently and privately handled without error by GROVER Pneumatic Tube Systems. Time, energy, messenger personnel are saved by this modern method. All paper work, monies, and even small instruments and packets are safely entrusted to the swift and silent GROVER carriers that travel forty feet a second on their errands. Modern hospitals need this kind of speedy, competent, errorless transmission of communications between departmental units.

You can depend on GROVER to meet your institutional needs accurately and economically and with an eye to your future expansion needs. A GROVER survey, consultation, recommendation—any or all may be requested without obligation or charge. We are at your service.

There's a special GROVER folder on hospital installations, their benefits and advantages. A copy is yours by return mail free for the asking. *Write Grover Company, 25521 W. 8 Mile Road, Detroit 19, Michigan.*

GROVER PNEUMATIC TUBE SYSTEMS
THE GROVER COMPANY
DETROIT 19, MICH.
Offices in Principal Cities

New Raymond E. Baldwin Bridge, connecting Old Lyme and Old Saybrook where the Connecticut River flows into Long Island Sound. Project Engineer for the State—Col. Howard S. Ives.

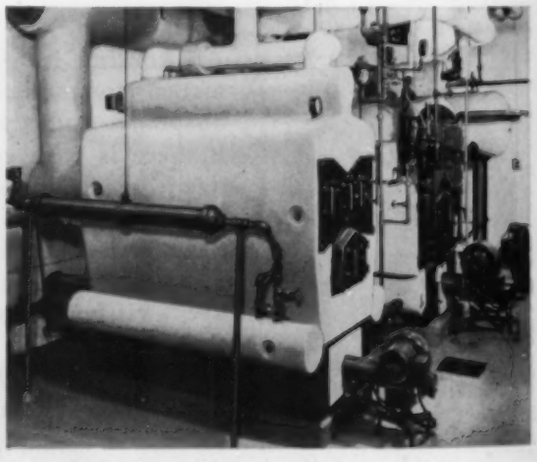
Radiant heat foils ice and snow on new bridge

DISCONCERTED, to say the least, is the motorist who slides through a narrow toll gate on smooth-as-glass ice. Connecticut's State Highway Department, collaborating with the Old Lyme-Old Saybrook Bridge Commission on the new Raymond E. Baldwin Bridge, successfully eliminated this menace to motorist, attendant, fenders and toll house with a novel radiant heating installation.

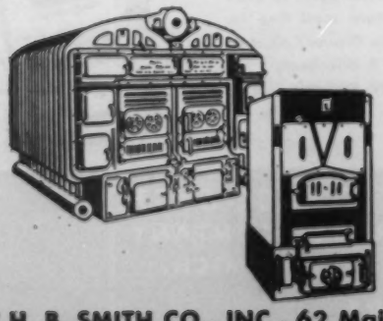
An oil-fired No. 240 Mills boiler supplies hot water which circulates through pipes embedded in the roadway adjoining the toll booths, melting ice and snow and keeping the roadway clear and ice-free. The oil burner operates only during icing periods; at other times 300 gallons of anti-freeze keep the system from freezing.

Unusual applications like this prove the versatility and dependability of Smith-Mills boilers . . . and their ability to deliver lowest-cost, efficient heating year after year. That's why, on even the toughest heating jobs, you're sure of satisfaction when you specify a boiler built by H. B. Smith.

Roadway, morning after a storm. Clear sections remained free of snow all during the storm; roadway in the foreground, though scraped, is still covered with ice patches.



Boiler room in Administration Building. The No. 340 Mills heats the building. Heating Contractor—William M. Ford; H. B. Smith Distributor—Marsden and Wasserman, Inc., Hartford, Conn.



H.B. Smith

CAST-IRON BOILERS

THE H. B. SMITH CO., INC., 62 Main St., Westfield, Mass., Offices and Representatives in Principal Cities

CABINETWORK DETAILS

Based on information from Nuroco Woodwork, New Rochelle, N. Y.

(*Continued from page 147*)

veneers. Although new methods of gluing and joining seem to offer promise of producing cheaper, stronger assemblies, there are many difficulties still to be overcome before they achieve fullest use. It is practically impossible, for example, to glue end-butt joints sufficiently strong to meet the requirements of ordinary service. End-to-side-grain joints are also difficult to glue properly. For these and other reasons, the traditional glued wood joinings (dowel, mortise and tenon, dado, tongue and rabbet, slip or lock corner, dovetail, blocked and tongue and groove) remain standard practice.

Some chemical applications are extending the usefulness of woodwork. New treatments to improve the rot and termite-resistance of wood and to control warping, shrinking, swelling (See AR Architectural Engineering, Feb., Mar., 1949) will not discolor the wood and permit the use of natural finishes. Densifying processes that greatly increase the hardness of wood offer the possibility of endowing soft woods with the hardness of oak. The same process permits through-coloring of the treated lumber.

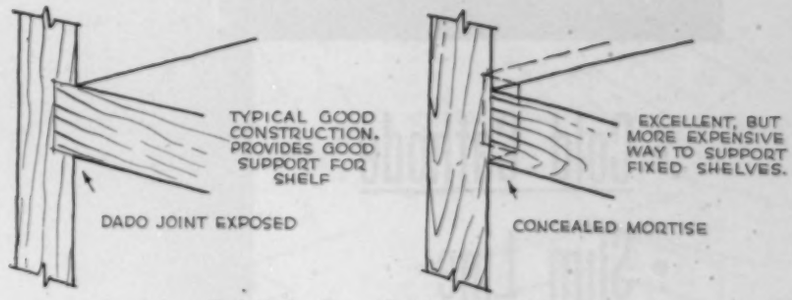
Plywoods with machine- or chemically-made textures are being increasingly used in cabinetwork. Striations, embossings, exaggerated grainings are examples. The use of such improvisations will undoubtedly increase to offset the shortage of hardwoods, and to meet the growing demand for more arresting surfaces.

HOW TO TELL GOOD WOODWORK

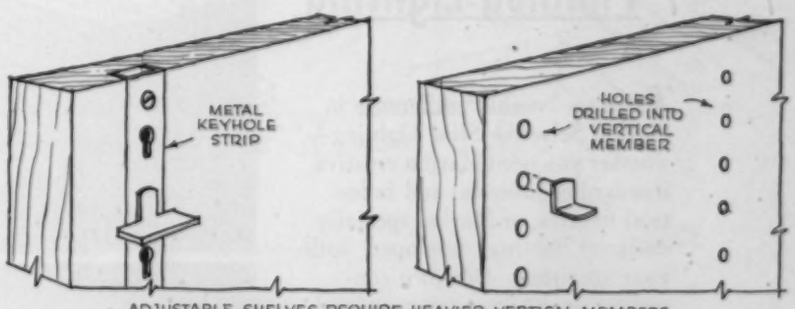
Surface

The surface should be free of all disfiguring defects such as raised grain, stains, evidences of poor and uneven

(*Continued on page 155*)

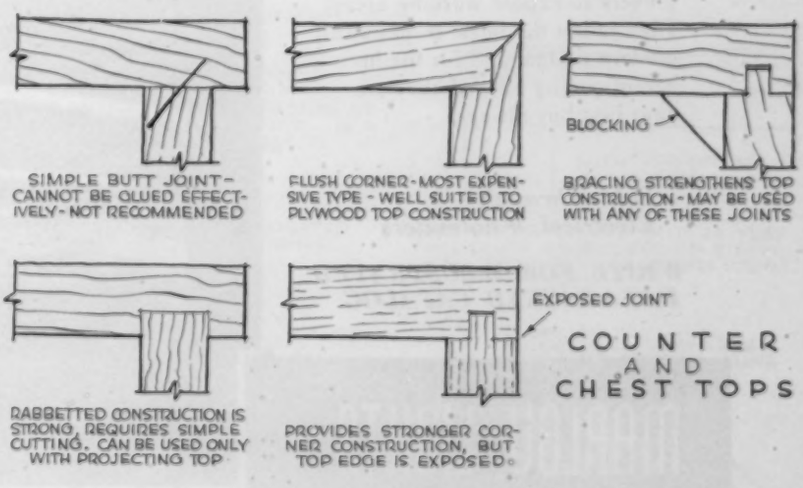

TYPICAL GOOD CONSTRUCTION. PROVIDES GOOD SUPPORT FOR SHELF
DADO JOINT EXPOSED
EXCELLENT, BUT MORE EXPENSIVE WAY TO SUPPORT FIXED SHELVES.
CONCEALED MORTISE

FIXED SHELVES



ADJUSTABLE SHELVES REQUIRE HEAVIER VERTICAL MEMBERS
MAXIMUM BOOKSHELF SPAN (UNLESS BACK-SUPPORTED):
SOFT WOOD (1" LUMBER) - 3'-0"
HARD WOOD (1" LUMBER) - 3'-6"

ADJUSTABLE SHELVES

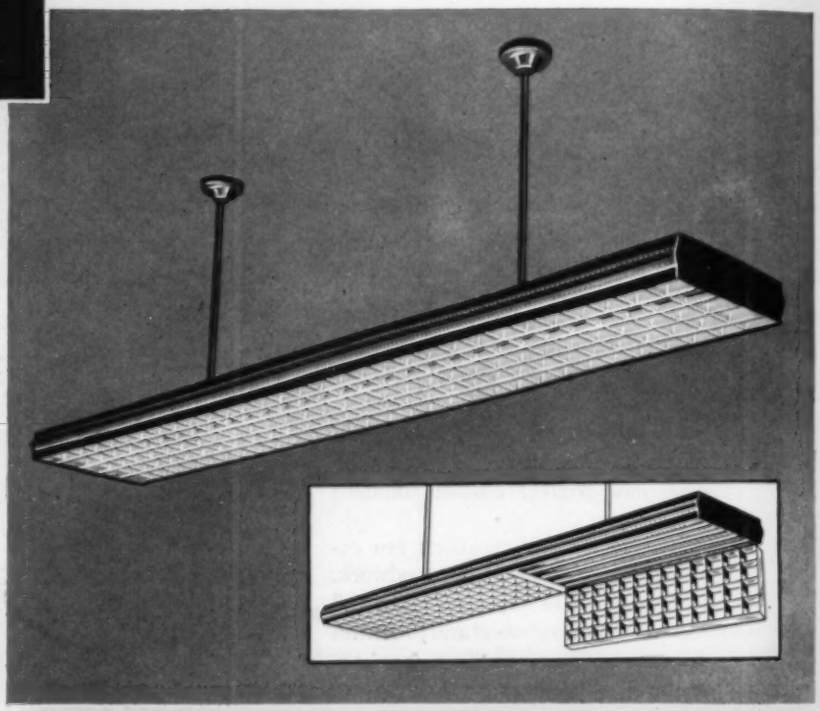

SIMPLE BUTT JOINT - CANNOT BE GLUED EFFECTIVELY - NOT RECOMMENDED
FLUSH CORNER - MOST EXPENSIVE TYPE - WELL SUITED TO PLYWOOD TOP CONSTRUCTION
BLOCKING
BRACING STRENGTHENS TOP CONSTRUCTION - MAY BE USED WITH ANY OF THESE JOINTS
RABBETTED CONSTRUCTION IS STRONG, REQUIRES SIMPLE CUTTING. CAN BE USED ONLY WITH PROJECTING TOP
PROVIDES STRONGER CORNER CONSTRUCTION, BUT TOP EDGE IS EXPOSED.
EXPOSED JOINT

COUNTER AND CHEST TOPS

MARLOU
lights your way to

SELECTIVE SLIM LIGHTING..

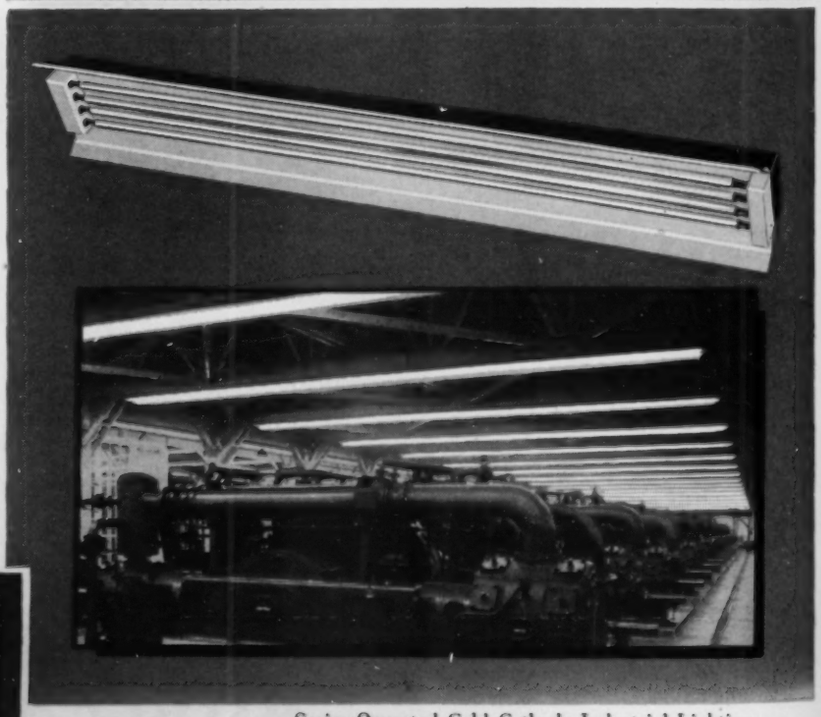
- Cold Cathode
- Slim Line
- Planned Lighting



There's a "visible" difference in Marlou Selective Slim Lighting—whether you need Marlou creative standard commercial and industrial fixtures, or Marlou specially designed lighting developed with your architect. Our own controlled production of fixtures and cold cathode tubes assures you of uniform, consistent quality always. Marlou fixtures are fashioned to provide 92% reflectivity, are engineered with removable hinged louvers to expose working areas. They reflect the latest in practical, modern design, and for the inherent quality offered, they are your best buy always.

Sold Through Electrical Wholesalers

WRITE FOR ILLUSTRATED DATA-PACKED CATALOG



Series Operated Cold Cathode Industrial Lighting Project for one of America's Major Industries

MARLOU LIGHTS

50 South Avenue
Fanwood, New Jersey

Designers and Manufacturers of Distinctive Lighting for Industry

CABINETWORK DETAILS

Based on information from Nuroco Woodwork, New Rochelle, N. Y.

(Continued from page 153)

planing, sanding, tool marks, gouges, scratches, dirt. Moldings should have clean edges, arrises and profiles. They should be crisp. There should be no chatter marks, caused by too rapid cutting, or any splintered edges. At the miters, profiles should match perfectly — evidence of perfect cutting.

If the material is to receive a natural finish, the color and graining should be uniform (or correctable with staining).

Joints

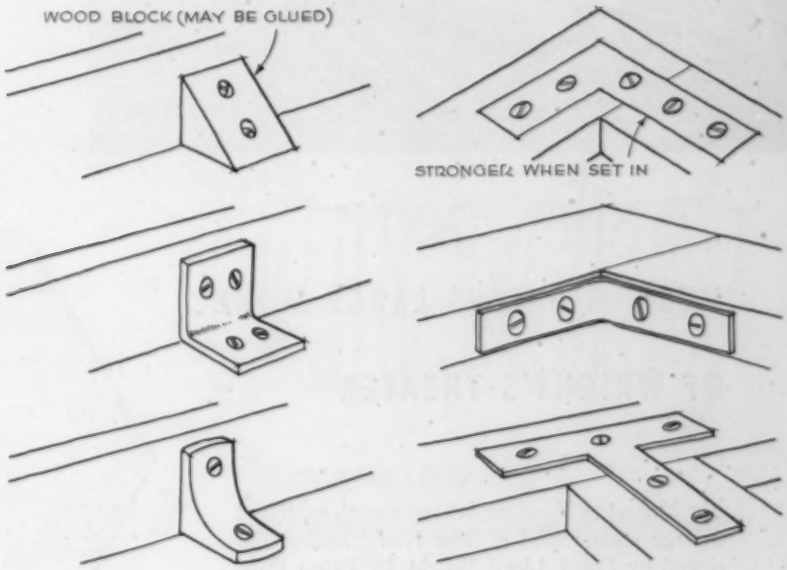
All joints should be cleanly matched, tight. Verticals should be plumb.

Look for signs of warping, splitting, checking, shrinking. If plywood is used in the construction, examine treatment of panel edges. If edges are face-veneered, check appearance and application of veneer.

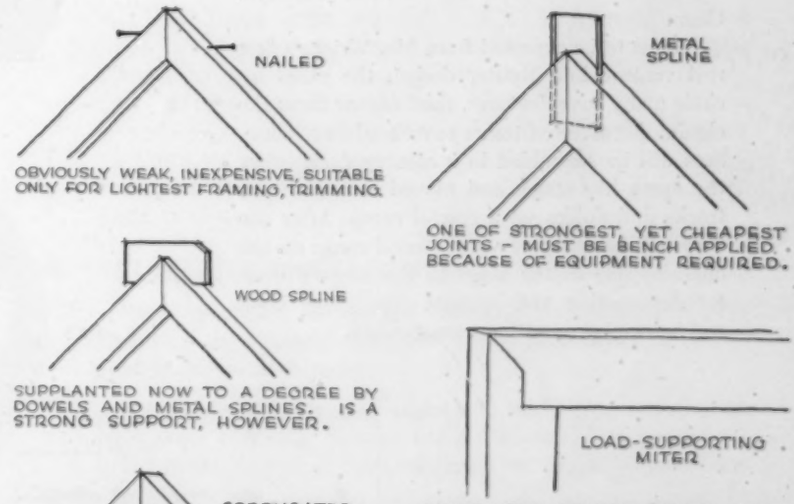
Poor woodwork betrays itself in its joints. Low-cost joints often replace correct (and costlier) connections. Good woodwork has dado cuts in vertical pieces to support horizontal members, rabbetted construction to stiffen vertical members joined at right angles. Large mitered moldings should be doweled or secured by means of metal or wood splines. Blocking should be used to stiffen larger pieces and to secure tops to dressers, wardrobes and similar pieces.

Working Parts

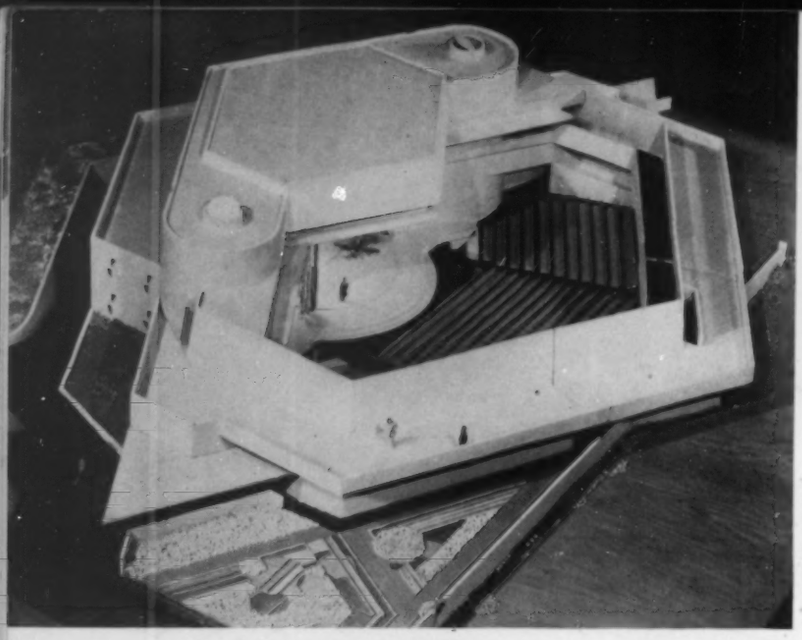
Cheap construction of working parts, such as drawers and doors, makes for quick obsolescence. Drawer fronts should be dovetailed to sides, or secured by some other interlocking joint. Drawer backs and bottoms should be let into the sides. Drawer bottoms should be sufficiently strong to support the drawer contents without sagging. Drawer sides should be of hardwood to resist wear, unless drawer is supported on side runners. Drawer should fit snugly, not bind, snag, or rattle.



BRACING

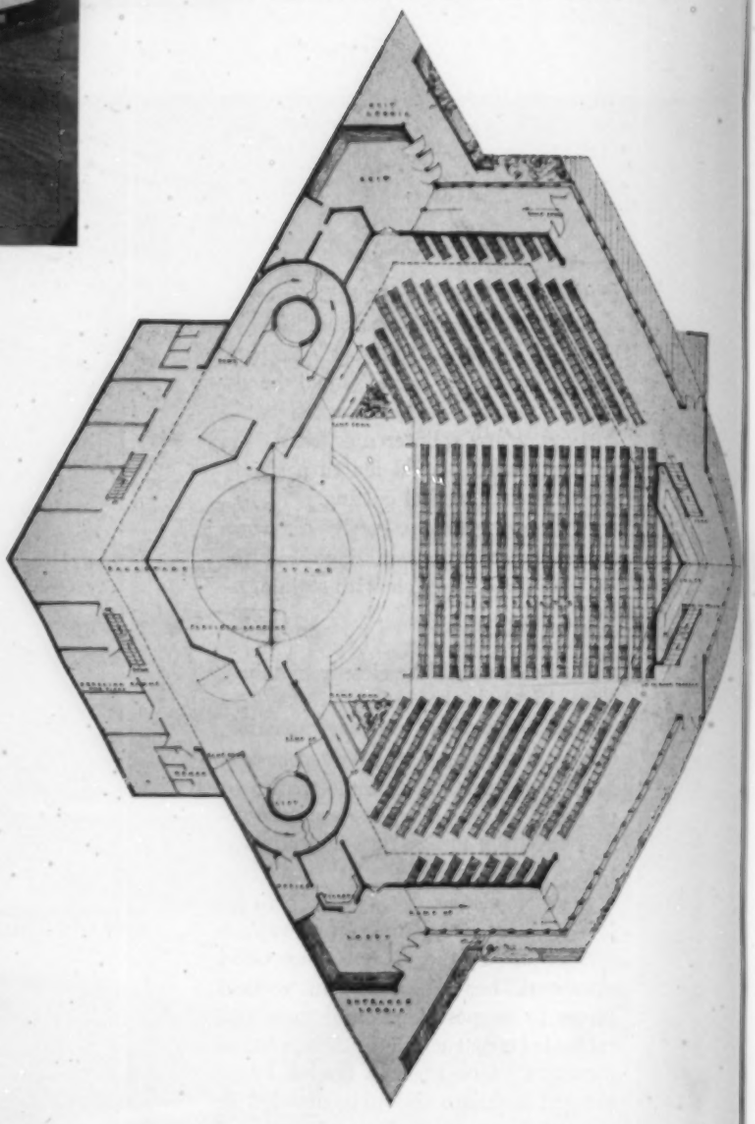

NAILED
OBVIOUSLY WEAK, INEXPENSIVE, SUITABLE ONLY FOR LIGHTEST FRAMING, TRIMMING.
METAL SPLINE
ONE OF STRONGEST, YET CHEAPEST JOINTS - MUST BE BENCH APPLIED BECAUSE OF EQUIPMENT REQUIRED.
WOOD SPLINE
SUPPLANTED NOW TO A DEGREE BY DOWELS AND METAL SPLINES. IS A STRONG SUPPORT, HOWEVER.
LOAD-SUPPORTING MITER
THIS IS ONE OF FEW MITERS THAT WILL CARRY A SUPERIMPOSED STRESS. MORE COSTLY BECAUSE OF EXTRA CUTTING
CORRUGATED FASTENER
USED ONLY ON ROUGH MITERS - SUCH AS SCREENS, WHERE ACCURACY IS UNESSENTIAL.
INVISIBLE WOOD SPLINE
DOWELLED
A STRONG, INEXPENSIVE MITER.
WOOD SPLINE PRODUCES STRONG MITER. HAS ADVANTAGE OF BEING COMPLETELY INVISIBLE.

MITERS



Peter S. Kaufmann Photo

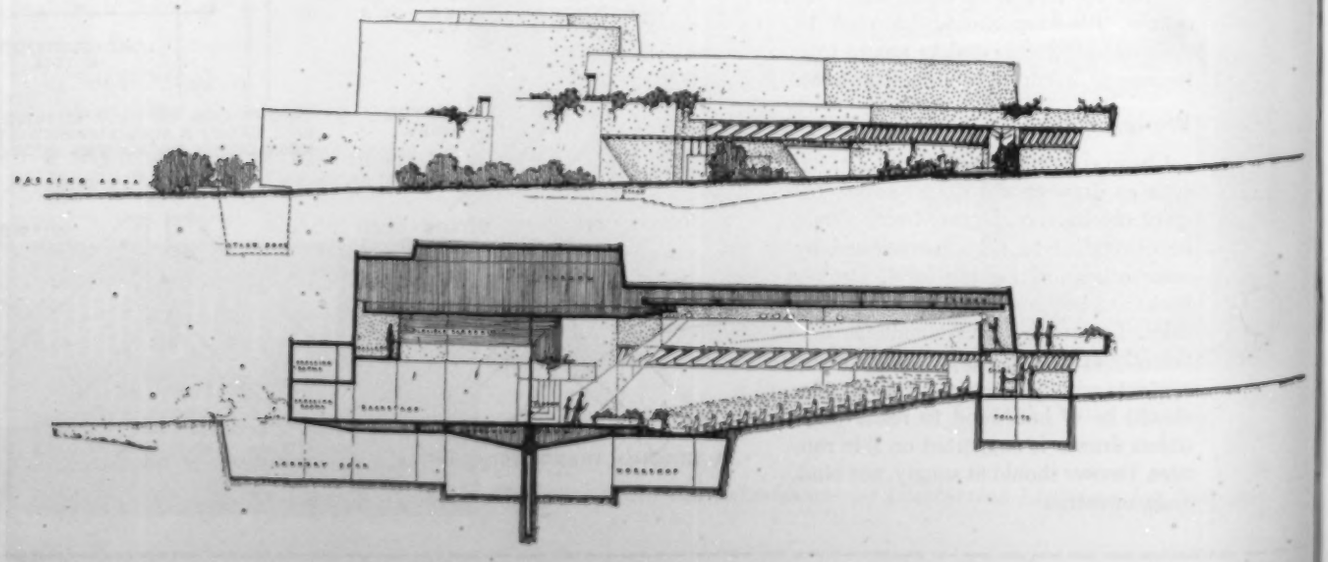
The New Theater will be hexagonal, its sheer walls free of ornamentation. To ease congestion, it will have two lobbies and a balcony-height terrace for the intermission promenade. Stage will be circular



MUSEUM SHOWS LARGE MODEL OF WRIGHT'S THEATER

The Museum of Modern Art last month exhibited a large scale model of The New Theater, designed by Frank Lloyd Wright for Paton Price and Associates. The theater is to be built this summer on an 8-acre rolling site near Hartford, Conn.

As was to be expected from Mr. Wright's first real venture into theater design, the plans include many novel features, chief among them the elimination of the customary overhead stagehouse. Sets will be assembled in a scenery dock below the apron-like stage, and moved into place by tracks and dollies up a special ramp. After use they will be returned via a second ramp on the opposite side of the stage to the scenery dock for demounting and storage. The stage itself will be revolving, without proscenium.



Surgeons' Scrub-Up Sinks of Crane Duraclay, San Gabriel Valley Hospital

Duraclay Pattern Bath, San Gabriel Valley Hospital

Duraclay Wash-Up Sinks, San Gabriel Valley Hospital

San Gabriel Valley Hospital is an outstanding example of the modern small hospital. Here, as for the largest institutions, Crane supplies not only a full line of Duraclay items, but also the washroom fixtures, plus a vast array of specialized plumbing equipment.

duraclay

"EXCEPTIONALLY TROUBLE-FREE SERVICE"

SAN GABRIEL VALLEY HOSPITAL

"...We have had exceptionally trouble-free service from our Crane plumbing fixtures. The Duraclay pieces, such as wash-up sinks, service sinks, and bathtubs are as free from scratches, discoloration, and abrasive wear as they were when installed. We feel definitely that our confidence in Crane quality has been justified."

D. W. Lawrence, Supt.,
SAN GABRIEL VALLEY HOSPITAL ASSOCIATION, INC.

Easy to clean, acidproof, immune to thermal shock, Duraclay is entirely different from any other material used in hospital fixtures.

Selections in Duraclay sinks and baths are included in your copy of Crane Service for Architects. For Special requirements, see your Crane Branch or Crane Wholesaler.

* *Duraclay exceeds the rigid tests imposed on earthenware (vitreous glazed) established in Simplified Practice Recommendations R-106-41 of The National Bureau of Standards.*

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NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

Hoover Reports on Construction

The Hoover Commission on executive reorganization in federal government completed its formal reports to the Congress and mulled over public reaction which came speedily and often bitterly. Plans are under way for continuing the spirit of the Hoover group, however, with formation of a new volunteer organization to carry on the work. Dr. Robert L. Johnson, president of Temple University, heads the new committee which has enrolled 700 outstanding citizens in its initial effort.

During the latter part of March the Commission reports went up to Capitol Hill at a rapid rate — almost one each day. The building industry took particular notice of two — the Interior Department report which dealt with heavy federal construction and the report on federal business enterprises which took up the federal housing agencies.

A significant feature of the Commission's report on heavy construction was that recommendation calling for concentration of all major responsibilities for heavy works — dams, levees, power facilities, etc. — in the Interior Department. This obviously would take away from the Army Corps of Engineers its coveted rivers and harbors and flood control programs. This one facet of the Hoover Commission investigations has been stirring up more controversial comment in construction circles, in and out of government, than any other.

Six Reasons Given

The Interior report also called for establishment of an independent Board of Impartial Analysis for all construction projects. Such a board would be part of the White House staff, taking its suggestions to the President and to Congress both as to utility and as to timing of the big construction projects. The Commission gave Congress six reasons for its recommendations in this regard:

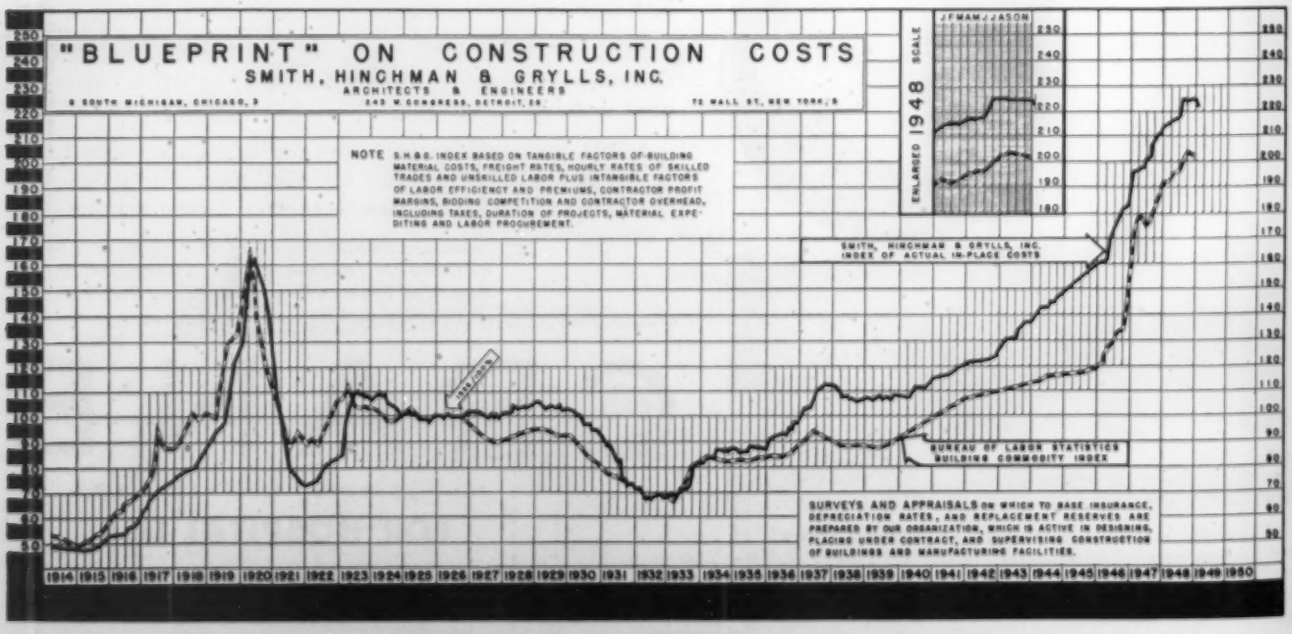
1. To avoid competition for labor and materials among the government agencies and thus increasing costs.
2. To provide a center for control of construction where the volume can be adjusted to the ebb and flow of the economic tide as an aid to unemployment.
3. To stop wasteful conflicts between certain construction agencies.
4. To secure adequate data upon which such works would be established and which is now lacking through separation of responsibilities.
5. To assure through the Board of Review proper proof of need and timing of construction.
6. To provide the Congress and the public with an overall view of the government's construction activities.

Wallace S. MacKenzie

CONSTRUCTION COST FORECAST

Wallace S. MacKenzie, new President-Treasurer of Smith, Hinchman & Grylls, Detroit industrial architectural firm, forecasts a steady 10-year upturn in construction, based on a current downturn in building costs (see chart below), and at prices which people can afford. "No violent declines are seen," says Mr. MacKenzie, "all the elements making for lower building costs will continue with ups and downs over a long period and building costs will slowly work their way downward, but we have no reason to expect violent drops nor continuing long-drawn-out declines. If the ultimate fall during the next five year period should amount to as much as 20 per cent, it would be surprising to most persons close to the building business."

(*News continued on page 160*)


"BLUEPRINT" ON CONSTRUCTION COSTS
SMITH, HINCHMAN & GRYLLS, INC.
ARCHITECTS & ENGINEERS
NOTE S.H.&G. INDEX BASED ON TANGIBLE FACTORS OF BUILDING MATERIAL COSTS, FREIGHT RATES, HOURLY RATES OF SKILLED TRADES AND UNSKILLED LABOR PLUS INTANGIBLE FACTORS OF LABOR EFFICIENCY AND PREMIUMS, CONTRACTOR PROFIT MARGINS, BIDDING COMPETITION AND CONTRACTOR OVERHEAD, INCLUDING TAXES, DURATION OF PROJECTS, MATERIAL EXPEDITING AND LABOR PROCUREMENT.
ENLARGED SCALE 1948
SMITH, HINCHMAN & GRYLLS, INC. INDEX OF ACTUAL IN-PLACE COSTS
BUREAU OF LABOR STATISTICS BUILDING COMMODITY INDEX
SURVEYS AND APPRAISALS ON WHICH TO BASE INSURANCE, DEPRECIATION RATES, AND REPLACEMENT RESERVES ARE PREPARED BY OUR ORGANIZATION, WHICH IS ACTIVE IN DESIGNING, PLACING UNDER CONTRACT, AND SUPERVISING CONSTRUCTION OF BUILDINGS AND MANUFACTURING FACILITIES.

Current decrease in building costs indicates boom in construction, says Smith, Hinchman & Grylls

Sanymetal* "PORCENA"

*Trade Mark Reg. U. S. Pat. Off.

(Porcelain on Steel)

TOILET COMPARTMENTS

Sanymetal "PORCENA" ACADEMY Type Toilet Compartments are suitable for conservative but modern toilet room environments.

Sanymetal "PORCENA" NORMANDIE Type Toilet Compartments endow a toilet environment with dignity and good taste.

Why the Bare Functional Type of Toilet Room Is No Longer Suitable

The ascendancy of good taste combined with new concepts of sanitation and convenience in toilet room environments makes the bare functional type of toilet room inadequate according to today's standards.

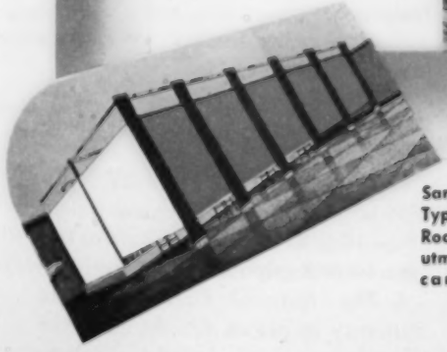
Toilet compartments usually dominate a toilet room, influence the toilet room environment and help to fulfill modern concepts of sanitation and convenience.

Sanymetal "PORCENA" Toilet Compartments are fabricated of ageless and fadeless material, porcelain on steel, which is a glass-hard, stainless material that always looks new, does not absorb odors, is moisture- and rust-proof, and resists the corroding of ordinary acids. The glistening "PORCENA" finish, which can be wiped clean as easily as a porcelain table top, requires no painting or refinishing.

Sanymetal "PORCENA" Toilet Compartments combine the results of over 35 years of specialized skill and experience in making over 100,000 toilet room installations. Ask the Sanymetal Representative in your vicinity (see "Partitions" in your phone book for local representative) for further information about planning suitable toilet room environments. Refer to Sanymetal Catalog $\frac{21b}{6}$ in Sweet's Architectural File for 1949.

THE SANYMETAL PRODUCTS CO., INC.
1689 URBANA ROAD • CLEVELAND 12, OHIO

Sanymetal "PORCENA" CENTURY Type Ceiling Hung Toilet Compartments offer the utmost in sanitation and provide modern, distinctive toilet room environments for schools, institutions, terminals and other public buildings.



Sanymetal "PORCENA" ACADEMY Type Shower Stalls and Dressing Room Compartments provide the utmost in sanitation for tourist camps, gymnasiums, clubs, Y.M.C.A.'s. etc.

Write for Sanymetal Catalog 86 which illustrates modern toilet room environments suitable for all types of buildings. Several attractive designs in a wide range of colors available. This catalog is also contained in Sweet's $\frac{21b}{6}$ Architectural File for 1949.

Sanymetal* TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS

*Trade Mark Reg. U. S. Pat. Off.

How To Build Floors of RATED Strength and Fire-Resistance

HOME, SCHOOL, COMMERCIAL AND INDUSTRIAL FLOORS

THE ONE AND ONLY ALL-STEEL OPEN WEB BAR JOIST WITH THE NAILABLE TOP CHORD

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It's The MACOMBER V BAR JOIST

DESIGNERS prefer the universal application of this one steel joist to any floor system whether it be wood, tile, terrazzo or concrete.

BUILDERS like this all-steel joist that holds nails better than wood, requires no form work, eliminates delays and reduces service line installation time.

OWNERS appreciate the earlier occupancy possible, the reduced construction costs and insurance rates. Catalog on request. →

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STANDARDIZED STEEL BUILDING PRODUCTS

THE RECORD REPORTS

(*Continued from page 158*)

FWA Photo

Immediate construction is scheduled by the FWA for this Federal Office Building and U. S. Court in Nashville, Tenn.

What Hoover Wants for Housing

Architects, along with home builders and material producers, still are scanning closely the month-old Hoover Commission study dealing with housing activities of the federal government. It had already been recommended in the report on Veterans Administration that VA's loan guarantee program, one of the important federal aids to home construction, be transferred to the Housing and Home Finance Agency, further consolidating federal housing functions. Left to VA would be only that part of the plan wherein applying veterans are certified as eligible for loans under the law.

Briefly, the Commission has recommended that on housing:

1. Congress consider establishing one corporation under the government Corporation Control Act of 1945 to take over (a) the public war housing program, (b) the homes conversion program, (c) the veterans' re-use housing program, (d) the subsistence homestead and Greenbelt towns program, and (e) the Defense Homes Corporation.

(All this "to afford the flexibility of management and the simplification of budgeting, accounting and auditing authorized under the Act and thus to expedite liquidation.")

2. The Federal National Mortgage Association be placed under the administration of HHFA.

3. The Office of the Housing Expediter be placed under the administration of the HHFA since the work of the two agencies is closely related.

4. The National Capital Housing Authority be placed directly under the Commissioners of the District of Columbia.

(*Continued on page 162*)

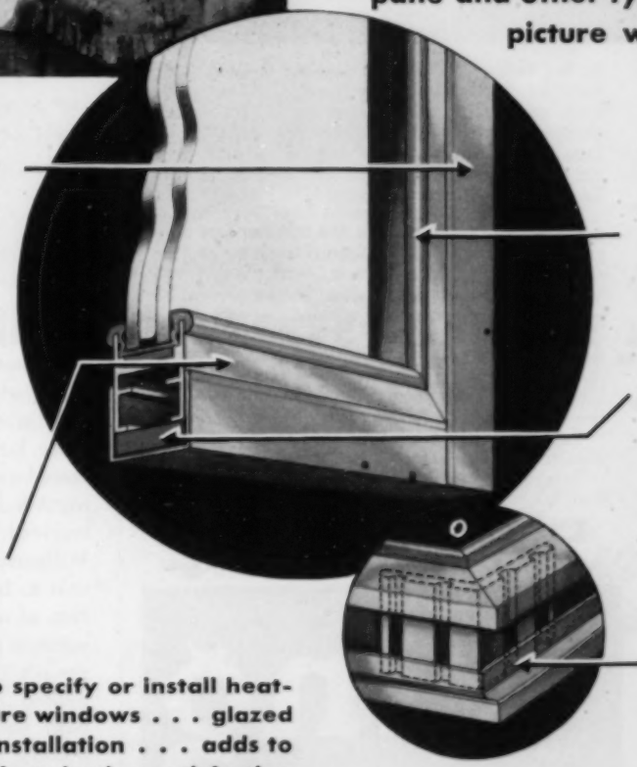
INTRODUCING

The New and Improved RUSSELL PATENTED "CUSHION-SEAL" METHOD OF GLAZING *Thermopane* PICTURE WINDOWS

PATENTED THERMOLOK* Closure Frame eliminates expansion, contraction and settlement problems . . . permits wider use of standard stock sizes of Thermopane and other types of dual glazing for picture windows . . . simplifies installation

Patented Thermolok Closure Frame . . . This well-known feature of the famous F. C. Russell Company combination window permits the sash to "float" within the closure frame—provides automatic and continuous adjustment for expansion, contraction and settlement—weatherproofs the entire window opening. Grips the sash securely . . . makes possible perfect installation on "out-of-line" openings. Greater use of standard sizes of picture windows is possible because the "floating" feature provides for variations of up to 1″ in width and 1″ in height.

Patented Extruded Aluminum Sash . . . Unique construction provides maximum strength at minimum weight . . . provides insulating, dead-air space within the frame.



KOROSEAL Cushion . . . Acts as both insulator and shock absorber. Koroseal is molded at sides to provide for expansion and contraction through the thickness of the glass.

Compensating Spacers . . . Used at bottom only. Permit centering of sash within Thermolok Frame. Prevent settling of picture window and maintain a perfect cushioned contact between Koroseal and glass.

Beautiful, Satin-finish Aluminum . . . Harmonizes with any color scheme or architectural design. Beautifies any structure.

Rigid, "Staked" Corners... Corner braces are inserted and "staked" to provide maximum rigidity.

Now it is possible for you to specify or install heat-saving, comfort-giving, picture windows . . . glazed in a manner that simplifies installation . . . adds to its beauty . . . assures perfect, lasting satisfaction and performance. » See any F. C. Russell Co. distributor or write direct for details and specifications.

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THE F. C. RUSSELL COMPANY

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World's Largest Manufacturer of Combination Windows

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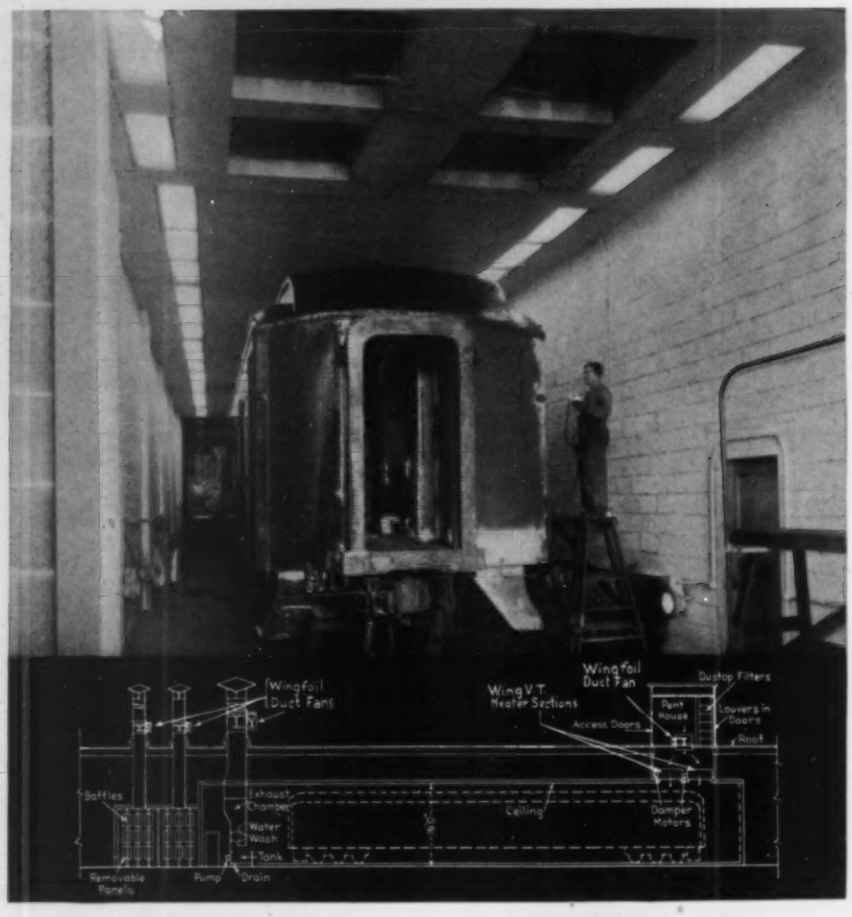
AN F. C. RUSSELL CO. PRODUCT



Making a Paint Shop "Breathe"

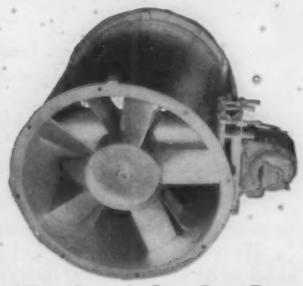
At the railroad car paint shops of the Central Railroad of New Jersey at Elizabethport, N. J., fresh air supply, and exhaust of contaminated air are accomplished by means of Wing Straight Line Duct Fans, while the temperature of the air is controlled by means of Wing Variable Temperature Heater Sections.

Two 7½ hp. Wing Straight Line Duct Fans, mounted in a penthouse at the open end of the paint spray shop, supply filtered fresh air at the rate of 45,000 cu. ft. per min. through 4 Wing Variable Temperature Heater Sections, which permit any temperature variation desired.

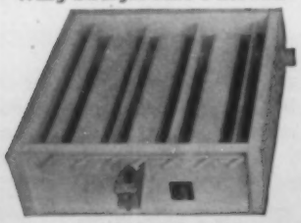
At the other end of the shop, the contaminated air is thoroughly washed by being drawn through a water curtain by two 15 hp. Wing Straight Line Duct Fans, installed in stacks above the roof, where it is exhausted to atmosphere.

Two 3 hp. Wing Straight Line Duct Fans are also installed in a small parts spray booth.

Reprint of an article describing this installation is available. Write for a copy today.



Wing Straight Line Duct Fan



Wing Variable Temperature Heater Section

L. J. Wing Mfg. Co. 151 W. 14th Street, New York 11, N. Y., Factories: Newark, N. J.; Montreal, Can.

Wing

VENTILATING FANS

THE RECORD REPORTS

(*Continued from page 160*)

PBA Revises List

The Public Buildings Administration once again has taken its list of future federal building projects down off the shelf and revised it for the benefit of Congress. This move came in connection with hearings on a bill providing $70 million — $40 million for site acquisition and a start on planning these structures, and $30 million for a more immediate program of repairs to federal buildings.

The thing to remember in connection with this PBA list is that its presence on Capitol Hill does not mean that construction of the projects it contains is imminent. There are some 1400 new jobs shown. These were culled from earlier revisions of a list of more than 4000 which PBA first unveiled in 1945, suggesting their construction should go forward some time in the next 20 years or so. The narrower list of 1400, comprising mainly post offices, is in the hands of the public works committees of Congress.

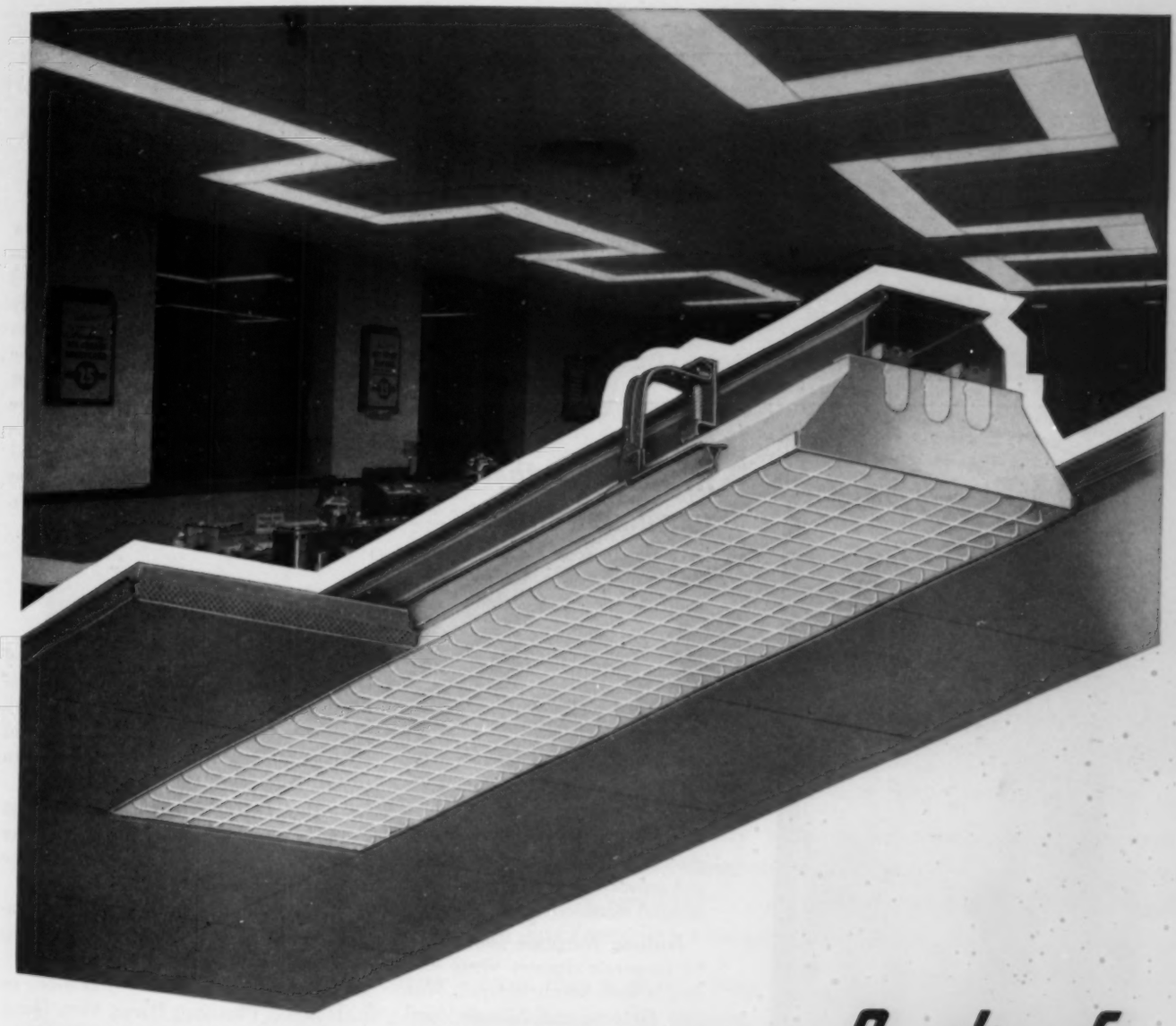
The site acquisition, advance planning and repair bill has passed the Senate. Right now it is given good chances for final approval in the House.

Shorts

• The industry is going to hear more before too long a time on application of the government's yield insurance aids to construction of large housing projects. This matter has been given almost no public attention since Congress put the law through last August. Now at least three large projects are under serious consideration though the Federal Housing Administration, at this writing, had received no formal applications. Teel Williams, a New York developer, was said to be negotiating for the construction of apartments under the yield insurance plan at Riverdale, N. Y. — a project that might run as high as $12 million in cost. Other groups toying with the idea of building large-scale housing with yield insurance guarantees were the University of Chicago and the Redevelopment Board of Philadelphia.

• The National Labor Relations Board was still somewhat indefinite in its own views on taking jurisdiction over building industry disputes. In a three-to-one decision it dismissed a case involving a

(*Continued on page 164*)



SPECIFICATIONS: TROFFERS SHALL BE *Smithcraft*

~~**OR EQUAL**~~

there is no equal!

THERE'S A BOOKLET ENTITLED "ARCHITECTURAL TROFFERS" THAT TELLS YOU WHY

write..... ***Smithcraft*** **LIGHTING DIVISION, CHELSEA 50, MASS.**

 (*Continued from page 162*)

Baldwin Hills Theater for Los Angeles is said to hit new low in construction cost. Designed by architect Louis Eugene Wilson for Fanchon and Marco, building is high and narrow at screen, low and wide at entrance. Occupancy will be May 1st

$33,000-per-year plastering contractor at Pittsburgh, Pa. This man's operations were found to be sufficiently localized that they did not interfere appreciably with interstate commerce. The five-man board did not agree, however, in the reasons for throwing out the case. The situation brought into focus once more the disagreement between NLRB's general counsel, Robert N. Denham, and the board membership itself over extent of jurisdiction as spelled out in the Taft-Hartley law.

❖ ❖ ❖

ON THE CALENDAR

Through October 30: Public showing of The House in the Museum Garden, designed by Marcel Breuer (ARCHITECTURAL RECORD, Feb., 1949, p. 24, and this issue, p. 10), Museum of Modern Art, New York City.

May 1–27: Inaugural Exhibitions in the new building, and 26th Annual May Show of works by local artists, The Akron Art Institute, Akron, Ohio.

May 13–14: Annual Meeting, Pennsylvania Society of Architects of the A.I.A., Hershey Hotel, Hershey, Pa.

May 19–21: Southern Conference on Hospital Planning, Buena Vista Hotel, Biloxi, Miss.

June 3–30: Annual Akron Art Institute School Exhibition, Akron Art Institute, Akron, Ohio.

June 9–24: 9th Antique Dealers' Fair, Grosvenor House, London, Eng.

June 14–17: 3rd I-B-R Short Course on Steam and Hot Water Heating Systems, Champaign-Urbana Campus, University of Illinois.

June 19–24: 3rd Annual Store Modernization Show, Grand Central Palace, New York City.

June 20–23: 42nd Annual Meeting, National Association of Building Owners and Managers, Mount Royal Hotel, Montreal, Canada.

June 20–24: Summer General Meeting, American Institute of Electrical Engineers, New Ocean House, Swampscott, Mass.

July 13–15: Summer Convention, American Society of Civil Engineers, Mexico City.

(*Continued on page 166*)

Win-Dor
(glass venetian windows with hardware by WIN-DOR)

FOR
friendly weather and functional interiors...

Only the imagination of the designer limits the adaptation of the Win-Dor System of Jalousie Hardware in an infinite number of beautiful and practical plans for living areas.

New Use For Glass

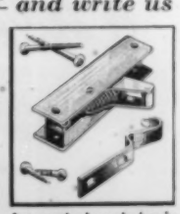
Here is the modern method of handling light and air... broadening the architect's scope . . . a practical solution for the protected outdoor living room with clear or obscure glass slats. Glass louvres are easily and conveniently operated and have integral weatherstripping.

Indoor Jalousie Benefits

In temperate climates where summer is most keenly enjoyed, Win-Dor Jalousies and Jalousie doors supplant solid partitioning with ventilated walls and doors. Positive operating control. The same superior mechanical system also available for Jalousie windows and doors with wood slats.

See the WIN-DOR Catalog in Sweet's 18F/1 and write us

Good wood casements again available, are most efficient with WIN-DOR Casement Hardware.



Automatic door closing is at its best with the "automatic hand"—the WIN-DOR Snugger.

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I would be interested in receiving detailed information on the following:
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HERMAN NELSON PRODUCT APPLICATION ENGINEER

George A. Partridge of The Partridge Co., Cape Elizabeth, Maine, represents The Herman Nelson Corporation in Maine and Northern New Hampshire. Mr. Partridge's thorough knowledge of the heating and ventilating industry is based upon 27 years' experience, including 19 years' service with Herman Nelson. During this time, he has become well acquainted with architects, contractors and school authorities in his territory. These men have learned to respect and appreciate the assistance Mr. Partridge, as a Herman Nelson Product Application Engineer, can give them in solving heating and ventilating problems. Mr. Partridge is a graduate of Bowdoin College.

READY TO SUPPLY YOU quickly with quality products . . . anxious to assist you with their practical, down-to-earth knowledge in the solution of heating and ventilating problems . . . are more than 75 Herman Nelson Product Application Engineers like George A. Partridge.

Theirs is more than a mere selling job. Whether your heating or ventilating problem calls for unit heaters, unit ventilators, propeller fans or centrifugal fans, you'll find that the nearest Herman Nelson Product Application Engineer knows exactly how they should be installed to provide the most efficient operation with maximum economy. He'll furnish you with concise, easy-to-use engineering data and specifications. He regards it as his duty to see that your customers enjoy the results they have a right to expect from Herman Nelson products.

More than 200 carefully selected Distributors and Stocking Jobbers, with personnel trained in the application, installation and servicing of our products, work closely with Herman Nelson Branch Offices and Product Application Engineers all over America. This nation-wide organization stands behind Herman Nelson Heating and Ventilating Products . . . recognized for their superiority for nearly half a century.

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THE HERMAN NELSON CORPORATION

Since 1906 Manufacturers of Quality Heating and Ventilating Equipment

MOLINE, ILLINOIS

Architectural editor Katharine Morrow Ford, and the jury of five architects view winning designs in House & Garden's *1948 Regional Awards Program. Left to right: Marcel Breuer, New York; Fred MacKie, Houston; Eero Saarinen, Bloomfield Hills, Mich.; Harwell Hamilton Harris, Los Angeles; Mrs. Ford; Joseph Hudnut, Dean, Harvard Graduate School of Design, chairman of the competition jury*

for HIGH quality LOW cost floors—

Years of research by Uvalde Rock Asphalt Company lie behind this beautiful, durable, high-quality tile. The result is a resilient tile that is *very* resistant to denting and marring . . a wide range of *fine colors* that won't fade or wear . . a flooring that is *highly resistant* to grease, alkali, alcohol and mild acid solutions. Azphlex is *ideal* for use over concrete slab as well as wood sub-floors.

Architect's rendering above shows the type of floor for which the new Azphlex Asphalt Tile is so well suited. Its high quality and superiority have been proved in many similar installations.

See our catalog in Sweet's Architectural for complete information, colors, and specifications . . . ask your Azphlex-Azrock dealer to show you samples.

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Makers of AZROCK and AZPHLEX Asphalt Tile

FROST BANK BLDG. SAN ANTONIO, TEXAS

AWARD WINNERS NAMED

H. & G.'s Regional Awards

Contestants from 37 states competed for *House & Garden's* 1948 Regional Awards in Architecture, with cash prizes totaling $2800. The awards were offered in four geographical sectors (South, East, Midwest and West) for houses considered the best expression of each region.

In the South, houses designed by the firm of Ralph S. Twitchell, Architect, and Paul M. Rudolph, Associate, of Sarasota, Fla., received three awards — first and second prizes, and an honorable mention. Further honorable mentions were given to: W. Danforth Compton of Cambridge, Mass., for a house in Kentucky; and Arthur Fehr and Charles Granger of Austin, Texas.

First prize in the East was won by William N. Breger and Stanley R. Salzman of New York. Second prize, plus two honorable mentions, went to Carl Koch, Architect, & Associates of Belmont, Mass. David Fried of Boston, Mass., also received an honorable mention.

Wischmeyer & Lorenz of St. Louis, Mo., received the first prize, and Max G. Mercer of Yellow Springs, Ohio, the second prize in the Midwest. Honorable mention in that region was given to Hamilton and Graham of Muncie, Ind.

In the West, first prize went to Carl Louis Maston of Beverly Hills, Calif., and second prize to William F. Hempel of Palo Alto, Calif. Honorable mentions were won by: Chiarelli & Kirk, Seattle, Wash.; J. R. Davidson, Los Angeles, Calif.; and Richard J. Neutra, Los Angeles.

Joseph Hudnut, Dean of the Graduate School of Design at Harvard University, headed the jury for the competition. Serving with him were Architects Marcel Breuer, Harwell Hamilton Harris, Fred MacKie, Jr., and Eero Saarinen.

Contemporary Architecture

In connection with the exhibition of contemporary architecture held recently by the Art Alliance of Philadelphia, the Philadelphia Chapter of the A.I.A. held a competition open only to architects in Philadelphia. Winner was Vincent G. Kling, who received the Chapter Medal for his design of "Peaslee Beach House," Mantoloking, N. J. First honorable mention went to Arthur B. White, for a house in suburban Philadelphia, and second honorable mention to Medalist

(*Continued on page 168*)

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Maintain your creative freedom with Pittsburgh Permaflector Lighting Equipment . . . the line made in modules of related units that may be combined to form the design patterns, illuminating effects and foot-candle levels required to do an outstanding job. "Standard" Pittsburgh Permaflector Fluorescent and Incandescent Units give "the light you want where you want it" efficiently and economically.

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NETBOY'S - Evanston, Ill.
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FOR MORE KNOW-HOW ON "CUSTOM LIGHTING" WITH STANDARD EQUIPMENT

Write for Catalogs 48 and 46 which give application ideas, descriptions, specifications and other data about flexible Pittsburgh Permaflector Lighting Equipment.

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PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

New art supply store for Arthur Brown & Bro., Inc., in New York City, includes exhibit room and lecture theater. Front is all glass for display. Thomas Sapolsky and Kassel S. Slobodien, Architects

Kling for his design of laboratory buildings for the Institute for Cancer Research, Philadelphia.

HOW TO INVEST IN TOMORROW

Tomorrow will prove the worth of the buildings you create today . . . and the roof you specify plays a vital part in proving that worth.

A roof of Bird Master-Bilt Shingles is an investment worthy of your best building design. It is a roof that not only armors and protects; it adds inimitable beauty and texture in both design and rich color, for Bird Master-Bilt Shingles are available in a wide range of colors and blendes, in more variety than is found in any other roofing material.

Bird experience since 1795 is reflected in the narrow cut-outs, the heavy shadowlines, the fire resistance, the thick-butt construction . . . the balanced composition and quality of Bird Master-Bilt Shingles. *Every* material is processed by Bird . . . that's why Master-Bilts are an investment in tomorrow: they're first quality, uniform high quality today. Write us today for full information about Master-Bilt and Master-Bilt Weather-Tex designs. Bird & Son, inc., 13 High Street, East Walpole, Massachusetts.

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BIRD *Master-Bilt* SHINGLES

The Art Alliance Medal for the best example of contemporary architecture by an architect other than a Philadelphian was awarded to William A. Ganster and the offices of W. L. Pereira of Waukegan, Ill., for their design of the Lake County Tuberculosis Sanatorium, Waukegan. First and second honorable mentions were awarded respectively to Burnham Hoyt of Denver, Colo., for the Red Rocks Amphitheater, Denver, and Pietro Belluschi of Portland, Ore., for the Equitable Savings and Loan Building, Portland.

New York A.I.A. Chapter Medal

Louis Skidmore, senior partner in the architectural firm of Skidmore, Owings & Merrill, has been awarded the Medal of Honor of the New York Chapter, A.I.A., for distinguished architectural achievement and high professional standing.

Taliesin Fellowship

A two-year fellowship to study at the Frank Lloyd Wright Foundation, Taliesin, Spring Green, Wis., has been awarded to Bodil Hammergaard of Copenhagen, Denmark. She is a graduate of the Technical University of Denmark.

Rome Fellowships Awarded

The American Academy in Rome has announced the awarding of one-year Rome Prize Fellowships in architecture to Spero Paul Daltas of St. Paul, Minn., and Henri V. Jova of Newburgh, N. Y. Mr. Daltas holds a B. Arch. from the University of Minnesota and an M. Arch. from Massachusetts Institute of Technology. Mr. Jova will receive his B. Arch. from Cornell in June.

AT THE COLLEGES

New Curriculum at Cornell

A new four-year course of study leading to the degree of Bachelor of Science in land planning will be introduced next fall in the College of Architecture at Cornell University in place of the five-year course in landscape architecture which will be discontinued.

The program is designed primarily as a preparatory course for post-graduate specialization in landscape architecture or city and regional planning.

Schweikher & Elting Exhibit

The work of Schweikher & Elting, Chicago architectural firm, was the subject of a special exhibition at the Goodspeed Hall galleries on the University of

(*Continued on page 170*)

TRANE

Orifice of a coil fin, magnified seven diameters to show perfection of design . . . Background: A "finspector".

There's more to this hole than meets the eye

This turtle-necked porthole is a king-sized view of the tube hole in a Trane coil fin. A coil of average size has about *ten thousand* of these holes in it, and the holes are, by far, the most important factor in the design of a successful heat exchanger.

In fabricating a coil, fins are aligned, tubes inserted through the orifices, and expanded into a perfect, permanent, solderless mechanical bond with the shoulder of the orifice. Note in the illustration (enlarged from an *unretouched* photograph) how the shoulder has been designed for its job—broad, flat and smooth.

Note, too, the perfectly formed belled collar—free from cracks and irregularities. This collar contacts the adjacent fin, bracing it and establishing the spacing uniformity that is essential for uniform coil performance.

Design features such as these explain why expansion or contraction in service do not reduce the efficiency of Trane coils. And since these coils are integral parts of most Trane heating and air conditioning products, the care with which they are constructed reflects the whole system of Trane precision engineering. Investigate through the Trane sales office in your area.

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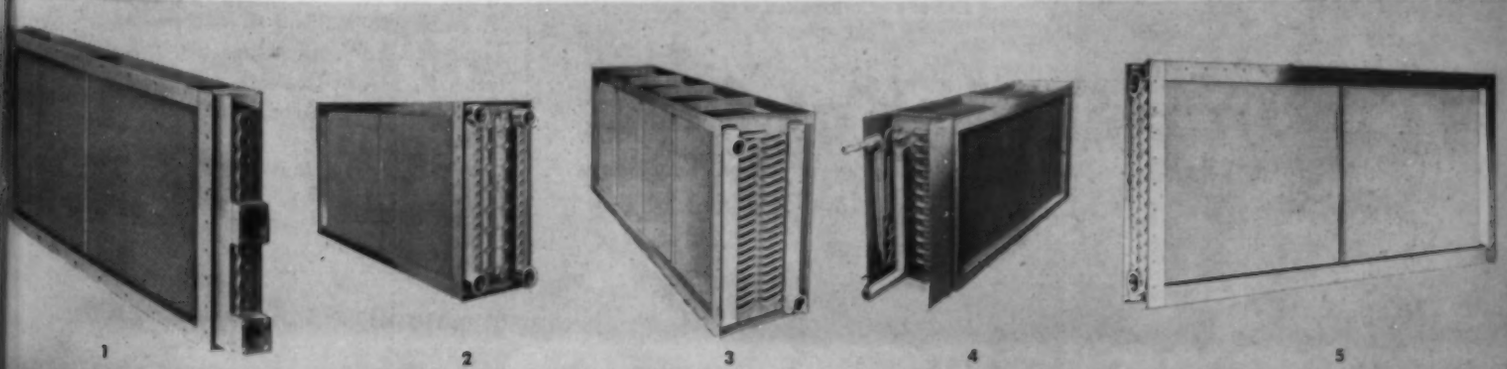
Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties . . . IN CANADA, TRANE COMPANY OF CANADA, LTD., TORONTO.

Trane heating and cooling coils are available in a huge array of sizes, styles, and types. Shown here: 1. Type SDS, the non-freeze heating coil with famous Trane Kinetic Orifices; 2. Type R cleanable cooling coil with removable headers; 3. Type OS cooling coil with drainable tubes; 4. Type DE coil for direct expansion refrigerants with exclusive Trane equalizing distributors; 5. Type E, versatile all-around heating coil



1 2 3 4 5

Chicago campus last month. The exhibition included 25 houses and several institutional buildings designed by the firm. It was presented by the University Renaissance Society.

Appointments

Philip M. Klutznick, president of American Community Builders, Inc., and formerly commissioner of the FPHA, has been named to the advisory board of the Institute for Urban Land Use and Housing Studies at Columbia University.

Four appointments have been made recently to the teaching staff of the Art Center School, Los Angeles: George Hoynigen-Huene, to the Photo School; Audubon Tyler, to teach drawing and story composition; Sterling Leach and Mary Sheridan to the Industrial Design Department.

Here's Why...

Architects: Polhemus & Coffin

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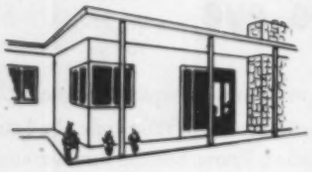
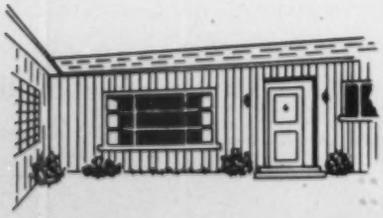
Make Satisfied Clients



Cabot's Gloss Collopakes are house paints of the finest quality. The patented Collopaking process reduces pure pigments to particles 100–1000 times as fine as in ordinary paints. As a result, Cabot's Collopakes flow together to produce a porcelain-smooth surface which shows no brush marks and resists the elements for years. And because only absolutely pure pigments — *no fillers or adulterants* — are used, the colors in Cabot's Collopakes *stay* fresh-looking and bright, even after long exposure.



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Note: Many of our thirty-two colors are unique . . . obtainable from no other source — another reason why Cabot's Collopakes make satisfied clients.

Samuel Cabot, Inc.

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OFFICE NOTES

Offices Opened, Reopened

The firm of Bliss & Hurt, Trudell & Berger, Associated Architects, has announced the opening of offices at 717 Market St., San Francisco 3, Calif. The firm is successor to the office of Bliss & Faville–Bliss & Fairweather.

Alex Danin has opened an office for the practice of architecture at 1837 Victory Blvd., Staten Island, N. Y.

Howard F. Fetters has announced the opening of an office at 313 S. State St., Ann Arbor, Mich., to be known as Howard F. Fetters, Consulting Engineer. The branch office of the company, located at 336½ Huron Ave., Port Huron, Mich., will continue under the direction of Henry Lumsden, Manager.

Charles S. Lindsay and Carl F. Maples have announced formation of the firm of Lindsay and Maples, Architects, with offices at 623 W. Hill Ave., Knoxville, Tenn.

Joseph Miller, Architect, has opened an office for the general practice of architecture at 1112 Thirteenth St., N.W., Washington 5, D. C.

Fay R. Spangler, Architect, has recently opened an office in the Anglo Bank Bldg., Fresno, Calif.

Matthew E. Trudelle, Architect, has opened an office in the Arizona Title Bldg., 128 N. First Ave., Phoenix, Ariz.

New Addresses

The following new addresses have been announced:

Louis G. Hesselden, A.I.A., Room 214 El Cortez, 323 S. 3rd St., Albuquerque, New Mexico.

Jester and Brukin, Store Designers and Planners (Stuart W. Jester, Merchandise Engineer, and Adolph Brukin, Architect), 44 W. 56th St., New York.

Ervin Katona, A.R.I.B.A., Chartered Architect, 23 Old Burlington St., London, W. 1, England.

Kelly & Gruzen, Architects-Engineers, New York office, 80 Fifth Ave., New York 11, N. Y.

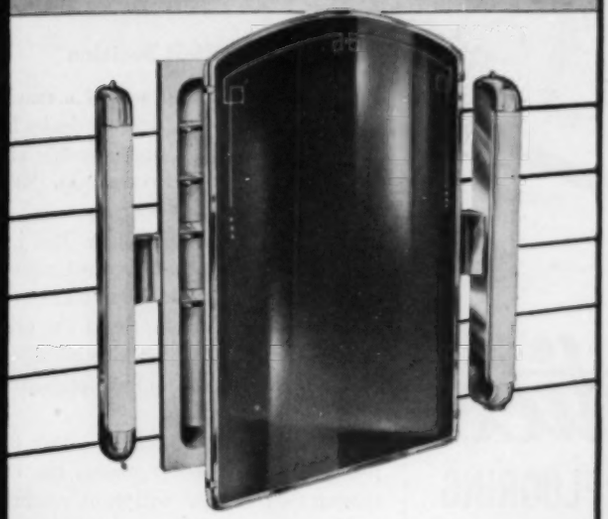
Lehmann & Dey, Registered Architects, 803 United Office Bldg., 2012 W. 25th St., Cleveland 13, Ohio.

William G. Lyles, Bissett, Carlisle & Wolff, Architects (William G. Lyles, T. J. Bissett, William A. Carlisle and Louis M. Wolff, all A.I.A., and Associates R. Emory Holroyd, A.I.A., and I. Maynard Pearlstine), 1321 Bull St., Columbia, S. C.

Dudley E. Soper, Architect, 201 E. 56th St., New York 22, N. Y.

(*Continued on page 172*)

NOW LAWSON BATHROOM CABINETS BONDERIZED AFTER FORMING!



BONDERIZED *AFTER FORMING* is an important new feature added to all Lawson Bathroom Cabinets! The bonderizing process is applied AFTER all shearing, drilling and forming is completed. It provides 100% BONDERIZED protection against rust and corrosion . . . assures longer life for all Lawson Cabinets!

AND . . . Lawson Cabinets, BONDERIZED *AFTER FORMING, cost no more!*

ARCHITECTS SPECIFY LAWSON BATHROOM CABINETS... BECAUSE they have: *one-piece drawn steel body,* stainless steel hinge and shelf supports, first-quality mirror . . . and now, they are BONDERIZED *AFTER FORMING!*

Write today for catalog of bathroom cabinets and chrome accessories.

WORLD'S LARGEST BUILDERS OF BATHROOM CABINETS

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824 EVANS ST.,

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Lawson BATHROOM CABINETS

133 YEARS

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venturi-flo CEILING OUTLETS

uni-flo SUPPLY GRILLES *and* RETURN AIR REGISTERS

WERE SELECTED FOR INSTALLATION IN THE

GENERAL PETROLEUM OFFICE BUILDING

BARBER-COLMAN Air Distribution Products were selected for use in this outstanding Los Angeles building after careful analysis and study by the owner, architect, and mechanical engineer. The study showed superior flow characteristics, more rapid diffusion, higher aspirating efficiency, use of greater temperature differential, minimum pressure drop, and lower noise level than other units considered. There are over 700 VENTURI-FLO Ceiling Outlets throughout the building offices, and a large number of UNI-FLO supply grilles and return air registers in the halls and rest rooms.

VENTURI-FLO CEILING OUTLET IN OFFICE

ARCHITECT
Wurdeman & Becket
3757 Wilshire, Los Angeles

MECHANICAL ENGINEER
Ralph E. Phillips
600 St. Paul Ave., Los Angeles

AIR CONDITIONING CONTRACTING ENGINEERS
W. S. Kilpatrick Co.
1100 E. 33rd St., Los Angeles

BARBER-COLMAN COMPANY
1232 ROCK STREET • ROCKFORD, ILLINOIS

By John Caulfield Smith

Architects Hold Assembly

Last year's record volume of construction is proof that Canada occupies an important place in world economy, President A. J. Hazelgrove told delegates attending the recent annual assembly of the Royal Institute of Canada at Niagara Falls. This building activity is more than a boom, he declared. It is a sign of the "awakening of the great potential of Canada after years of retarded development."

Mr. Hazelgrove, who comes from Ottawa, was re-elected president for 1949. Other officers elected include Murray Brown, Toronto, 1st vice-president; H. H. Simmonds, Vancouver, 2nd vice-president; James H. Craig, Toronto, honorary secretary, and J. Roxburgh Smith, Montreal, honorary treasurer.

Rendering of cooperative apartment building for North Vancouver, B. C., which is to have 14 suites, the majority of which will have two bedrooms. William K. Knoppe is the architect for the new project

Court Reverses Nail Decision

The $3000 fine imposed by a magistrate on a North York lumber dealer for selling nails at an "unreasonable and unjust" price (ARCHITECTURAL RECORD, Aug., 1948) has been squashed by the Ontario Supreme Court. The justices took the view that circumstances of supply and demand should be considered in determining the fairness of the price charged and that the accused was entitled to a generous interpretation of their hearing on his case.

The decision is expected to have far-reaching effects. For instance, the Dominion Government will shortly submit its Transitional Measures Act, which incorporates 12 orders-in-council keeping alive the remnants of wartime controls, to Parliament for extension for another year. Sections of the Act providing for prosecutions for unreasonable and unjust prices in any line of goods probably will be dropped. Provision may be made only for the continuation and enforcement of price ceilings now in effect on certain designated commodities.

C.M.H.C. Exhibition on Way

Central Mortgage & Housing Corporation's traveling housing display will make its first public appearance at the House Builders' Exhibition at Winnipeg, April 25–30. Emphasizing good design and construction, the exhibit is built around 10 colorful scale house models illustrating acceptable standards for National Housing Act financing.

Residents of Toronto will see the display as a feature of the National Home Show to be held in the Horticultural Building, Exhibition Park, May 20–28. It will also be on view at summer exhibitions in Calgary, Edmonton, Saskatoon, Regina and London.

(*Continued on page 174*)

SPECIFY *Amtico*

THE BEST IN RUBBER FLOORING

✓ for *QUALITY* and *DURABILITY* — backed by over 30 years' experience in the manufacture of rubber floors. There are thousands of installations throughout the country, in public buildings and private homes, to testify to its long life.

✓ for *APPEARANCE* and *BEAUTY* — 20 adaptable colors offer unlimited design possibilities. Easy-to-clean Amtico keeps its new look with a minimum of care.

✓ for *COMFORT* and *QUIET* — the natural resilience of rubber makes the perfect floor to absorb shock, soften noise and lessen fatigue.

✓ for *PRICE* — with all its luxury look Amtico is still moderately priced. Its exceptional long life and low-cost maintenance, plus the fact that periodic refinishing is unnecessary, make it acceptable for even budget installations.

✓ Let us send you free samples and complete information about modern Amtico Rubber Flooring for your files.

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The finest in rubber flooring for over 30 years.
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Perrine Avenue, Trenton 2, N. J.
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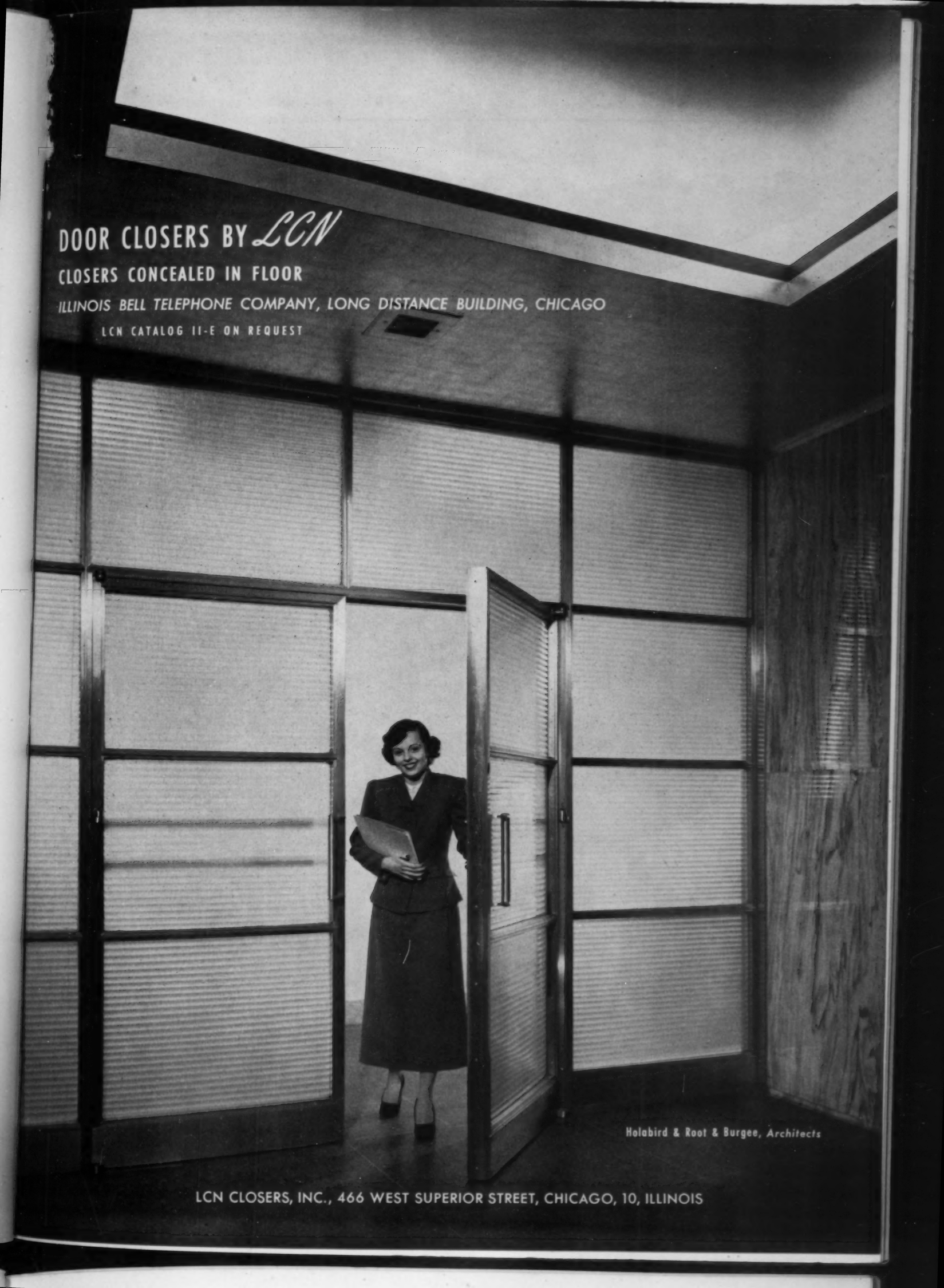
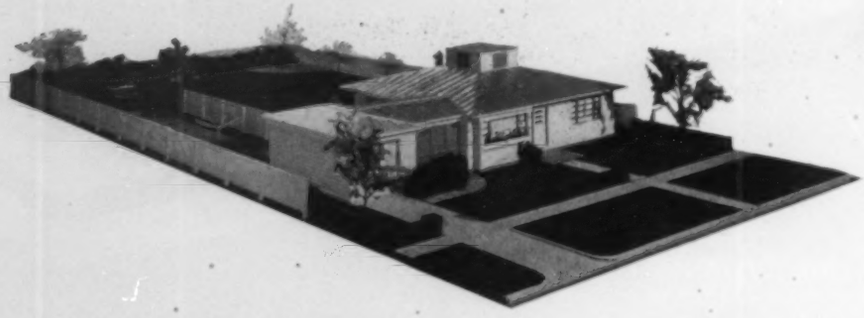
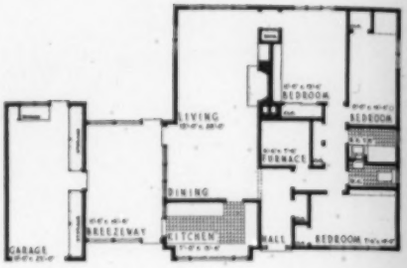
City.....State.....


DOOR CLOSERS BY LCN
CLOSERS CONCEALED IN FLOOR
ILLINOIS BELL TELEPHONE COMPANY, LONG DISTANCE BUILDING, CHICAGO
LCN CATALOG 11-E ON REQUEST
Holabird & Root & Burgee, Architects
LCN CLOSERS, INC., 466 WEST SUPERIOR STREET, CHICAGO, 10, ILLINOIS



Models of new aluminum house similar to photo and plan (left and below) on show at five main Eaton stores in Canada. In conjunction with the Aluminum Company of Canada and T. Eaton Co. Ltd., Canadian Homes & Gardens is promoting house to help solve housing problem of middle income group. Aluminum used in siding, windows, roofing, insulation. Fetherstonhaugh, Durnford, Bolton and Chadwick; H. M. Kippax, architects



● Kewaunee Hospital Casework, Cabinets and Laboratory Furniture are scientifically designed to give you top efficiency and time-saving convenience. Built completely in our plants, Kewaunee's high standards, plus production-line manufacturing, assure custom quality at lower cost.

Kewaunee Metal Furniture is Bonderized for protection against rusting and chipping. Hospital Laboratory table tops and working surfaces are of KemROCK for resistance to acids, alkalis, solvents, abrasion and ordinary physical shocks.

You are invited to consult Kewaunee's Hospital Engineering and Planning Service without cost or obligation.

C. G. CAMPBELL, President

Representatives in Principal Cities

KEWAUNEE MFG. CO., 5046 S. Center St., Adrian, Mich.

Contract Awards Compared

Construction contract awards steadied themselves in U. S. in January, but did not pause in their phenomenal rise in Canada:

	Awards (millions)	% change from Jan. '48	% change from Dec. '48
United States	$1,261	+9	−9
Canada	73	+113	+30

The current hesitation in U. S. business may ultimately be reflected here. Our economic cycle usually runs 3 to 6 months behind that of our southern neighbor. But, even if a sustained downward trend should set in, its adverse effect might be mitigated. We'll be in the middle of our biggest building season by the time it reaches Canada. At any rate, there's little evidence of worry on the part of construction men. Why should there be with figures like these from MacLean Building Reports:

	Awards (millions)	% change from Jan. '48	% change from Dec. '48
Residential	$30.3	+102	+ 70
Commercial and Institutional	18.1	+ 71	− 50
Industrial	9.2	+753	+104
Engineering	15.1	+504	+132
Total	72.8	+113	+ 30

(*Continued on page 176*)

for visible beauty ...for insulation unseen

Aluminum Statue of Eros, by Sir Alfred Gilbert, in Piccadilly Circus, London. Erected 1893.

aluminum

Aluminum was pure ornamentation in 1893. Today, its *usefulness* is virtually unlimited. As an insulating material, for instance, aluminum offers almost exclusive ability to reflect radiant heat, and assures exceptional freedom from condensation. These were prime reasons why Reynolds Reflective Insulation was specified for the 312-family Redfield Village Development in Metuchen, N. J.

In addition, Reynolds Reflective Insulation is light in weight, odorless and embodies aluminum's rustproof permanence. It makes a fast, clean, economical installation that *stays in place*. It meets F.H.A. requirements. (Redfield Village Specification: Reynolds Reflective Insulation, Type B, foil laminated to both sides of tough Kraft paper. Bowed between studs, providing two air spaces, sidewall conductance is 0.13. Between floor joists over unheated area, overall coefficient is 0.10.)

Reynolds, whose entry into aluminum production started the industry toward its present expansion, is developing both the design and the functional qualities of this material. New embossing facilities have created unusually attractive surface textures in Reynolds *Lifetime* Aluminum Roofing and Siding, Gutters and Downspouts. Reynolds Aluminum Windows offer superior engineering features in all residential casement, fixed and picture types. Reynolds also offers a variety of Architectural Shapes. For descriptive literature in A.I.A. file form, please write:

Reynolds Metals Company,
Building Products Division,
Louisville 1, Ky., offices in 32 principal cities.

REYNOLDS *Lifetime* ALUMINUM

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

REYNOLDS METALS

REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS

Redfield Village, Metuchen, N. J.
Architect: Erwin Gerber • Insulation engineers and contractors: The Fireproof Products Co., Inc., New York.
Exterior walls and crawl spaces insulated with Reynolds Reflective Insulation.

1949 Holds Bright Promise

Investors, public and private, are expected to pour $3.3 billion into new construction and machinery in 1949, according to a forecast made by the Economic Research & Development Branch, Department of Trade & Commerce.

The Branch points out that this represents a dollar increase of 8 per cent over 1948. But volume, which last year amounted to one-fifth of our gross national product, will rise only slightly due to a 7 per cent advance in prices. It's stated that inflationary pressures will be relieved by greater availability of labor and materials in 1949. (For report on a comparison forecast regarding the supply of building materials see next news item.)

Of the $3.3 billion, about $1.3 billion will be spent on new machinery and equipment. The remaining $2 billion will go for new construction. Here's a breakdown by categories:

	New capital expenditure (millions)
Business	$ 696
Institutions	178
Housing	741
Direct government	371
Total	$1986

In addition, repairs and maintenance will probably take another $1.5 billion, or 4 per cent more than the dollar outlay for the same purpose last year.

There's no reason to believe that the brightness of the economic picture painted by this forecast is exaggerated. Similar forecasts made in 1947 and 1948 were almost 100 per cent accurate. Our present prosperity, which some Cassandras say can be pricked like a balloon, may turn out to have a hide more like that of a cannon ball.

Material Output Seen High

Will our building material resources be strained in 1949? No, answers a forecast prepared by the Economic Research & Development Branch, Department of Trade & Commerce. The forecast deals with 30 building materials, as well as primary items such as iron, steel and lumber.

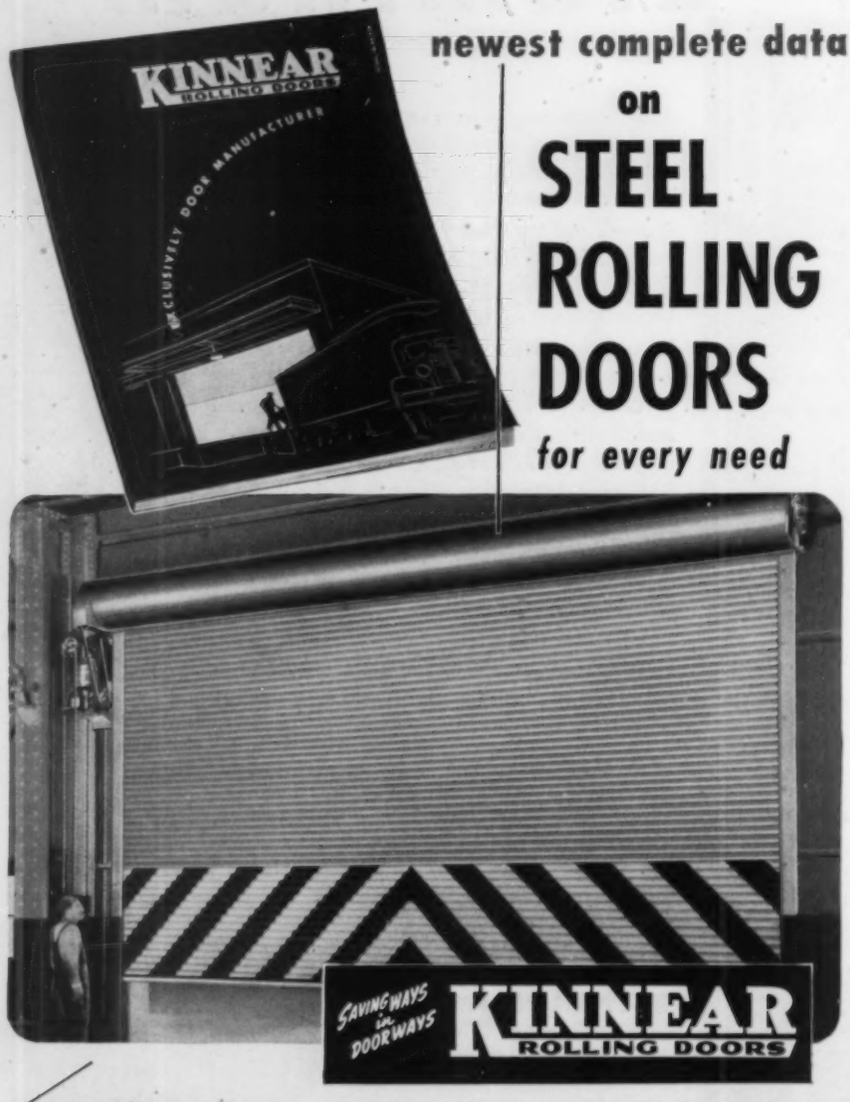
"If manufacturers' intentions are realized," declares the Branch, "supply should be substantially greater and more balanced than in 1948. Large production gains are expected for enameled sanitary ware, heating equipment and cement which were most consistently short. The anticipated small improvement in supply of iron and steel may also be reflected in domestic production of machinery and equipment."

Increased output is looked for in 21 of the 30 materials surveyed. Only two — electric water heaters and rock wool batts — will be up 20 per cent or more, but nine, including cement, concrete brick and blocks, bulk rock wool, asphalt shingles, bathtubs, sinks, wash basins, furnaces and rigid insulating boards, will gain 10 to 20 per cent. Cast iron soil pipe and radiators will likely be hiked 5 to 10 per cent, but the shortage of steel pipe and nails is expected to continue.

Garages To Be Made Longer

Add to the factors influencing residential architecture the new, elongated look in motor cars. Recognizing the

(*Continued on page 178*)



newest complete data on

STEEL ROLLING DOORS

for every need

Complete information on smooth-working, space-saving doors for every need is at your fingertips in this new catalog. The easy upward action of Kinnear Rolling Doors brings time-saving efficiency to any doorway. The strong, all-metal, interlocking slat curtain opens completely out of the way, safe from damage . . . provides extra safety against fire, wind and intrusion when closed. Any size; motor or manual control. Full data on sectional-type upward acting doors is also included. If you haven't a Kinnear catalog for quick reference now, send for free copy of this latest issue.

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Designed in PLASTER to last a lifetime

Architects Emery Roth & Sons chose plaster applied by the Morell Plastering Company for New York's White Turkey Restaurant, in the 300 East 57th Street Apartment Building. This new building was recently winner of an award from the New York chapter, A. I. A., for apartment houses of more than six stories.

Plaster is perfectly adapted to traditional or modern interiors . . . is easily and economically maintained . . . will last the lifetime of the building.

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PLASTER
• ADAPTABLE • FIRE-RESISTANT
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current trend in automobile design, Central Mortgage and Housing Corporation has stepped up requirements for garages built with houses financed under the National Housing Act. After March 31 they must have a minimum inside length of 20 ft. instead of the formerly acceptable 18 ft. Minimum inside width of 10 ft. remains unchanged.

Other revisions in the NHA building standards call for increasing the minimum frontage of lots for single family dwellings from 33 to 40 ft., except in built-up areas, and for minimum side-yard widths of 4 ft. for bungalows and 6 ft. for one and a half and two story houses. In apartment buildings, standard kitchens with direct natural light and ventilation must be provided for all dwelling units containing two or more bedrooms. Kitchenettes or kitchen alcoves may be employed for units having no bedrooms or only one bedroom. The alcove must open off either a living or dining space and have a minimum floor area of 40 sq. ft. with a depth not exceeding the width of the open side.

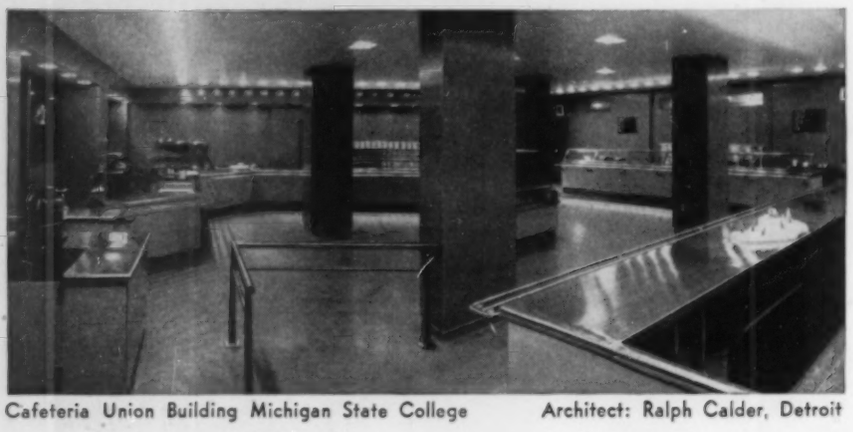
Threat to Municipal Autonomy?

Property owners have long felt they bear a disproportionate share of the cost of operating our cities and towns. But giving them tax relief would compel municipalities to face the alternative of imposing "nuisance" taxes or seeking provincial grants.

This fact was pointed out recently by Eric Hardy, director of the Bureau of Municipal Research, in an address to the Financial Statisticians' Association. He went on to say that the efficient performance of local services is the great bulwark of municipal autonomy. Passing on of the cost of these services to the ratepayers is in accordance with the time-honored principle of holding the spender of public money responsible for its collection. If provincial aid were to be forthcoming, the government would specify where, when and how its funds would be spent. The municipalities would find themselves no longer masters in their own houses, and the ratepayers' control over local affairs would be substantially weakened.

The question to be faced by cities and towns seems to be, "Is the price of outside aid worth the loss of our autonomy?" Surely nuisance taxes, however repugnant, would be preferable. One thing certain: the property owners demand relief.

(*Continued on page 180*)



Cafeteria Union Building Michigan State College Architect: Ralph Calder, Detroit

where thousands dine at Michigan State College

● A summer's vacation period was all that was necessary for Van to equip the new enlarged Union Building Food Service Department.

● Collaborating with the Architect and Engineers, Van Kitchen Engineers designed the most modern cafeteria and kitchen including the latest in sanitary requirements.

Dish Washing Department—Union Building

● Van Engineers are available to assist on any food service problem.

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$10,000,000 head office for the Bank of Nova Scotia, Toronto, will have 25 floors. Mathers and Haldenby, and Beck and Eadie are the architects

ANNOUNCING

Improved daylight control for severe sun exposures with special PRISMATIC GLASS BLOCK

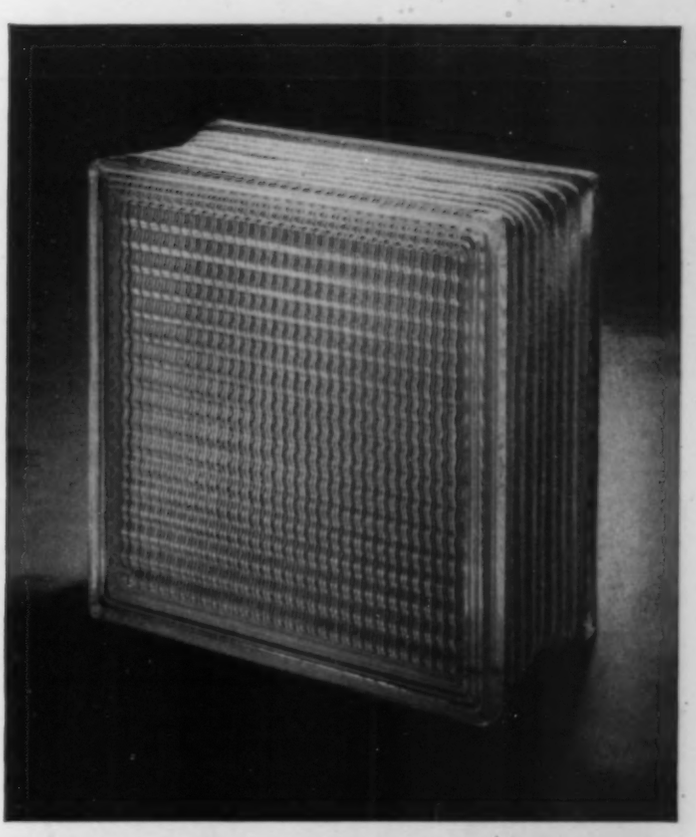
A NEW SUNSHINE prismatic block with a new standard of brightness performance is now available for use in unusually bright sun exposures. It reduces panel brightness below the best previous performance, yet it maintains a surprisingly high level of task brightness. The result is the lowest brightness ratio yet produced between fenestration and task.

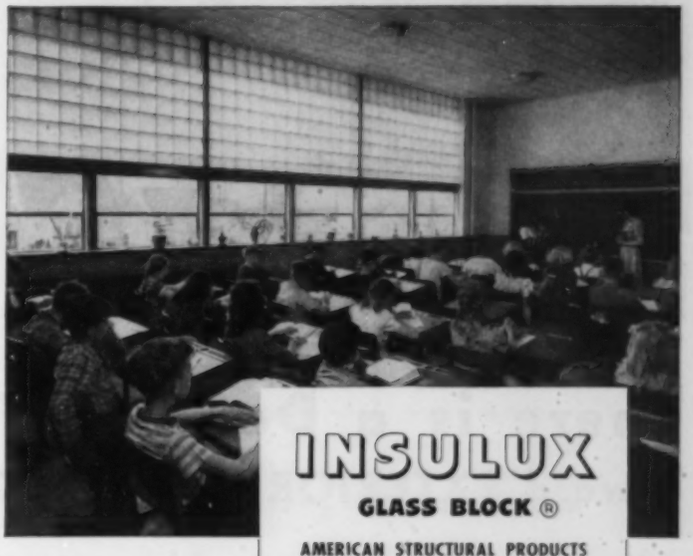
Through better light distribution, this new block narrows the spread between panel brightness and task brightness. It also narrows the spread between minimum task brightness under an overcast sky and maximum panel brightness under severe sun exposure.

When used in the standard Insulux Fenestration shown at right and lighted by a 500-foot-candle overcast sky (an average overcast day), it provides an average task brightness in a typical school classroom of 21 foot-lamberts, or an average task illumination of 30 foot-candles.

This block is called Insulux No. 352. It does not replace the No. 351 block, millions of which are now in use in the Insulux Light Directional Fenestration. Instead it answers a demand from school administrators, architects and illuminating engineers for a fenestration of still lower brightness ratio for certain severe sun exposures.

Ideal for southern California, the southwest and the Rocky Mountain states where illumination levels are higher and hours of sunshine are longer, this new block has the same appearance as the No. 351 (except for lower brightness). It can be used in the same building with the No. 351. For schools and other buildings oriented with the compass it can be used on the west and south with the 351 on the east and north, if the architect so desires, or on the east, south and west with the No. 351 on the north. For classrooms not oriented with the compass, it is ideal for southeast and southwest exposures.





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AMERICAN STRUCTURAL PRODUCTS COMPANY
Subsidiary of
OWENS-ILLINOIS GLASS COMPANY

SEND COUPON NOW

American Structural Products Company
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Gentlemen:

Please send revised copy of "Daylight in School Classrooms", showing performance of the new No. 352 Glass Block in classroom fenestration.

*Name*_____

*Address*_____

*City*_____ *County*_____ *State*_____

Wages Shade Living Cost

Since 1939, wage rates in the building trades have increased on the average nearly 20 per cent more than the cost of living in cities for which data is available. This statement, made by R. G. Johnson, general manager, Canadian Construction Association, is based on information supplied by builders' exchanges in eight representative centers: Vancouver, Edmonton, Saskatoon, Winnipeg, Toronto, Montreal, St. John and Halifax.

The survey covered bricklayers, carpenters, cement finishers, electricians, hod carriers, hoisting engineers, skilled and unskilled labor, and lathers. It reveals that Toronto wage rates are the highest in the country in the majority of trades with Vancouver a close second. Maritime and Quebec rates are generally lower than the average for the rest of Canada.

Mr. Johnson explains, "Wage rate statistics alone do not fully reflect the rise in construction workers' incomes. The increase since 1939 due to more continuous employment, upgrading, overtime, etc., is considerably more than the percentage increases in wage rates indicate." During the survey period wage rate increases averaged 75.9 per cent, whereas cost of living increases averaged 56.3 per cent.

Completion Level Still High

According to the latest housing bulletin issued by the Dominion Bureau of Statistics, 6643 dwelling units were completed during January, 1949. This compares very favorably with the level of completions throughout 1948. Indeed, with the relatively large number of dwelling units under construction at the end of the year, the usual seasonal decline is not much in evidence. By the end of January dwellings under construction had been reduced from 56,456 to 52,852, still a considerable number.

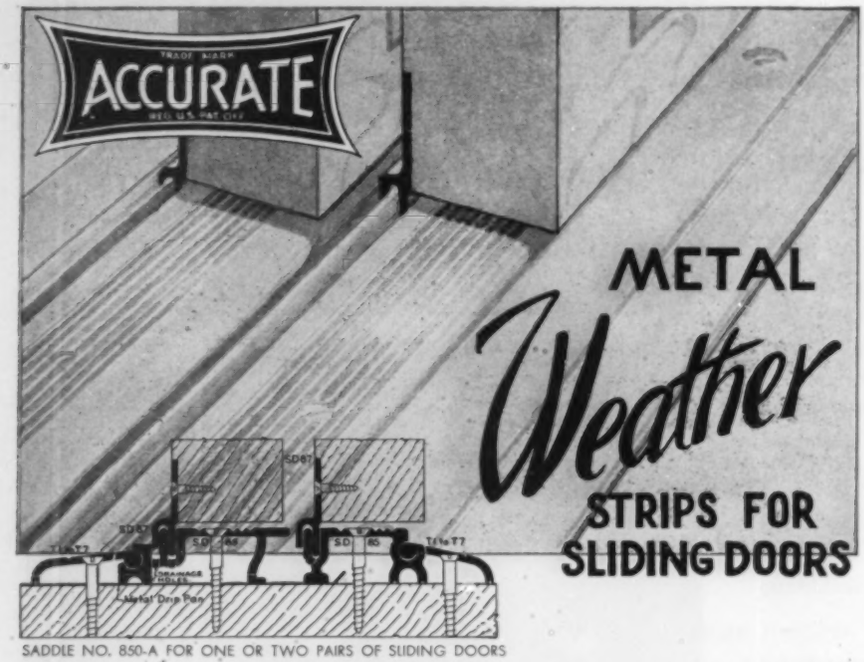
The average length of time required to build the dwellings completed in January was 7.0 months. This is an increase from 6.4 months in December, 1948 and the low of 5.4 months in September, 1948. It reflects the seasonal shift of labor from commencing new dwellings to completing dwellings under construction since the spring of last year.

The D.B.S. figures are estimated on the basis of a monthly survey carried out with the cooperation of Central Mortgage and Housing Corporation. All metropolitan areas and urban centers with a population of 5000 or more are enumerated completely. Approximately 400 sample areas lying outside these municipalities are also taken into account.

Community Centers Assisted

Premier Thomas L. Kennedy of Ontario has announced that provincial aid will be extended for construction of community recreational centers. Grants will be established on a sliding scale. A municipality will be eligible to receive $5000 on a structure costing $25,000, about 25 per cent of the cost if it runs below this figure and proportionately less if it runs over it. If a skating rink is included, the grant will be doubled.

Enabling legislation is to be made retroactive to May 1, 1948. At least 18 municipalities with projects under way are expected to benefit, and undoubtedly others will be stimulated into action. Largest center announced to date is a $350,000 arena in New Toronto.



SADDLE NO. 850-A FOR ONE OR TWO PAIRS OF SLIDING DOORS

There is a Definite Trend
Toward EXTERIOR SLIDING DOORS

More and more plans for residences, club houses and other structures are providing sliding doors leading to porches and terraces.

"Accurate" has contributed in no small measure to this trend by making possible a more efficient, smoother, gliding operation of sliding doors — plus wholly dependable weatherproof qualities. This has been accomplished by the development of advanced designs in bronze door saddles, also weather strip for meeting rails, stiles and head for application to sliding doors with overhead hangers or concealed bronze sheaves.

In any building, no window, no door, can be better protected against drafts, moisture, termites and heat losses, than with "Accurate" Metal Weather Strips, as proved by 43 years of experience.

Write for Illustrated Catalog

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A STORE FRONT with SELLEVISION

Morgan's Market, Evanston, Illinois — *Archt. James Roy Allen, Lake Geneva, Wisconsin*

Time for Sales Exposure

WHEN customers play hard to get it's time to put the entire store on display through a *Sell*evision* front. Regardless of the tides of trade *Sell*evision is a potent business stimulus and it is particularly effective when complete Brasco Construction is utilized.

Our Safety-Set line of heavy gauge store front members features metal sections substantially reduced in size to attain maximum *Sell*evision. Yet the largest lights of plate glass are held firmly and securely in the deeper, more uniform grip characteristic of all Brasco sash.

Striking and memorable store fronts, from the conservative to ultra modern *Sell*evision, can be designed and built complete with standard Safety-Set members. The full line is expertly fabricated in both handsome stainless steel and anodized aluminum. Installations require stock size millwork only.

Your nearest Brasco distributor offers intelligent cooperation and knows the short cuts to installation economy. Write for his address *now*. *©

★ ★ A COMPLETE LINE FOR EVERY DESIGN ★ ★

Brasco SAFETY-SET STORE FRONTS

BRASCO MANUFACTURING CO.

HARVEY • (Chicago Suburb) • ILLINOIS

Specialists in Metal Store Front Construction for more than 35 Years

(*Continued from page 144*)

1000 cu. ft. or 125,000 Btu/gal oil costing 9.4 cents per gallon.

Question 9. There is very little reliable data on the electric load characteristics of the residential heat pump and even less on how the operating cycle coincides with that of other electric appliances in the home.

Conclusions on this phase of the subject must wait until a sufficient number of units are thoroughly tested in the field under actual operating conditions.

Question 10. At the present time there are approximately 500 heat pump installations in the United States, the majority of which are in office buildings and small commercial buildings — very few are in residences. Unfortunately, most of the residential units on the market today consist of an assembly of conventional refrigeration equipment which, for the most part, was not designed for heat pump application.

It is very difficult to obtain high operating efficiencies and low first cost by putting together standard items of heat transfer and refrigeration equipment which were not designed for heat pump duty and which were assembled in small quantities.

Types of Heat Pumps in Test Houses

The heat pump units for the residences in Kingsport, Tennessee; Roanoke, Virginia; and Coshocton, Ohio are the air-to-air type. Outdoor air is used as the heat source and air is used to supply the heating and cooling to the occupied space.

The heat pump unit for the residence in Abingdon, Virginia is a water- and air-to-air type. Both well water and air are used as the heat source and air is used to supply the heating and cooling to the occupied space.

The heat pump unit for the residence in South Bend, Indiana is an earth and air-to-air type. Both the earth and air are used as the heat source and air is used to supply the heating and cooling to the conditioned space.

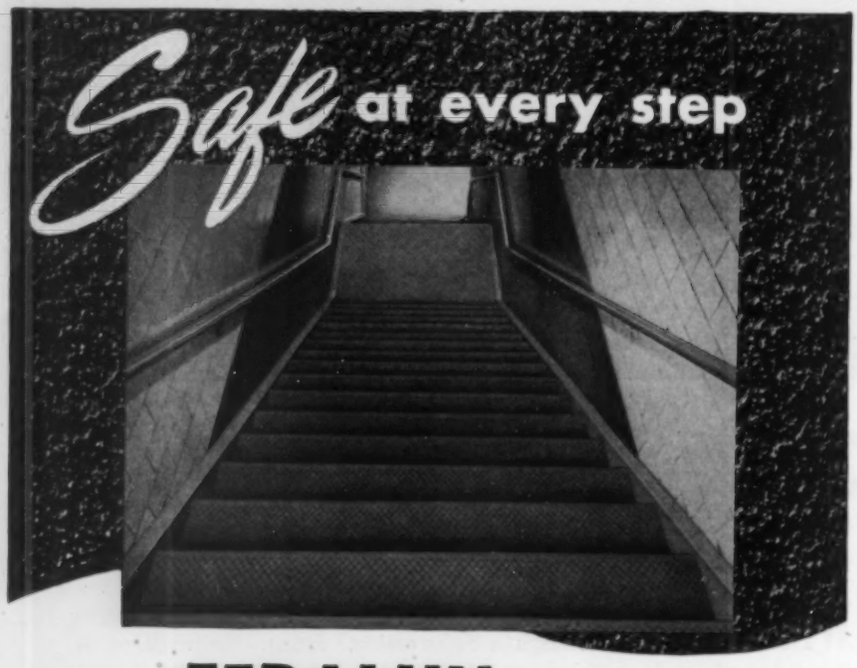
Each of the five heat pump units is contained in an enclosure 78 in. long by 60 in. high by 40 in. deep. This enclosure houses the circulating fans, the compressors, heat absorbing and heat dissipating coils, filters, humidifiers, and all the automatic controls (except the room thermostats) to give complete, automatic year 'round air conditioning.

Each of the five units contains two entirely separate refrigerant circuits, each with its own compressor, coils, valves, and connecting piping. In the air-to-air type the outdoor air is used as the heat source for both of the refrigerant circuits.

In the water and air-to-air type at Abingdon, Va. the well water is used as the heat source for one of the two refrigerant circuits and the outdoor air for the other. Approximately 15 gpm of well water with a temperature of 56F are delivered to the unit. After the heat is abstracted from this water it is discharged to a surface drain at the rear of the property.

In the earth and air-to-air type at South Bend the earth is used as the heat source for one of the two refrigerant circuits and the outdoor air for the other. To obtain heat from the earth, nine 2-in. wrought iron pipes varying in lengths from 20 to 30 ft. were driven vertically into the ground. A 1-in. wrought iron pipe was inserted in each of the larger pipes to within about 3 in. of the bottom

(*Continued on page 184*)



WITH FERALUN SAFETY TREADS

Workmen at the Curtiss Wright Plant, Propeller Division, Caldwell, N. J., go up and down these stairs . . . safe at every step.

Their shoe soles come to grips with non-slip Feralun Safety Stair Treads, cast iron, with wear-resistant abrasive embedded right in the walking surface.

Heavy traffic day in, day out — — but Feralun Safety Treads, built to take hard use, stay non-slip . . . last and last.

And that means low maintenance . . . and high safety.

4 TYPES:
Cast iron base . . . . . FERALUN
Bronze base . . . . BRONZALUN
Aluminum base . . . ALUMALUN
Nickel bronze base . . NICALUN

3 SURFACE STYLES:
hatched . . . plain . . . fluted

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AMERICAN ABRASIVE METALS CO. (AR-5-49)
460 Coit Street Irvington, N. J.

☐ Please send me your catalog on non-slip stair treads, floor plates, thresholds, elevator sills, and safety tile.

☐ Please have one of your safety engineers contact me.

Name..... Title.....

Company.....

Street.....

City..... State.....

new colors

speak softly yet clearly in Moultile Asphalt Tile

You'll be delighted when you see how your finished Moultile floors reflect the beauty that's in your mind's eye. Improved availability of pigments now adds variety, greater clarity and depth of tone to mellow Moultile colors. The crisp, distinct veining creates a pleasing "woven" effect against the lustrous background colors.

Yes, it's a pleasure to work with Moultile . . . and to live with Moultile. There's a toughness to Moultile that takes year after year of hard wear without visible effect. Moultile has the firmness to resist indentation and the strength to withstand subfloor vibration. Yet it provides a quiet, buoyantly comfortable, slip-safe footing.

You . . . and your clients . . . will be pleasantly surprised at the low cost of installing and maintaining a Moultile floor. For your copy of the new Moultile color chart, write today to THOMAS MOULDING FLOOR MFG. CO., 165 W. Wacker Drive, Dept. AR-5, Chicago 1, Ill.

The colorful, attractively patterned Moultile floor keynotes the decorative scheme of this reception room at Cruttenden & Eger, Chicago. Arthur A. Ehrlich, designer.

Moultile

Flexible-Reinforced **MASTER ASPHALT TILE**

When it comes to FLOORS... come to

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A Complete Unit for a Complete job

You're always *sure* you're getting the very best in efficient, economical packaged air conditioning when you specify Governair—the original patented design!

This complete unit is easy to install—requires only simple electrical, water and duct connections. Built-in Evaporative Condenser keeps water usage down to a minimum. Governair engineering assures correct coordination and balance of all functions. Generously proportioned heat transfer surfaces provide maximum performance and economy.

Choose Governair completely packaged air conditioners and you'll *always* do your best!

*Originators of Completely Packaged Air Conditioners

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Write Dept. K

GOVERNAIR CORPORATION
513 N. Blackwelder • Oklahoma City, Okla.

(Continued from page 182)

in such a manner as to cause the circulating non-freeze solution to flow first through the annular space and then through the inside of the one-inch pipe. The piping for this system was installed to make two parallel circuits. In all of the five systems the air delivered to and returned from the occupied space is common to both of the refrigerant circuits.

The air-to-air type contains one 2 hp and one 3 hp Freon-22 refrigerating compressor, one ¾ hp fan for circulating air to and from the conditioned space, and one 1½ hp fan for circulating air to and from the outdoors. The 1½ hp outdoor air fan was used on all five units in order to have all the parts identical. However, the fan is operating at a much slower speed on the two units using a dual heat source, actually requiring the equivalent of a ¾ hp fan motor.

CHASE NATIONAL BANK, PETER COOPER VILLAGE BRANCH
Architects: Shreve-Lamb-Harmon

Photo by Vassar

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BERGEN . . . *every time!*

It's like money in the bank when you choose Bergen Cabinet to translate your plans into enduring reality. The effort we make to meet the specifications can literally cover the length and breadth of the U. S.

A case in point is the new Peter Cooper Village Branch of the Chase National Bank. The country was scoured for curly white maple. Only 50,000 feet of veneers were obtainable throughout the land. Of this quantity, we were able to select just enough to complete the job. As we do not deviate from the designer's plans, so do we not compromise with quality of materials.

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The Five Residences

The five residences in which the heat pump units are located vary considerably in the layout of the space and in the type and kind of construction. The volume of the occupied space ranges from 9300 cu. ft. to 18,000 cu. ft. The residences include a two-story structure with basement, a one and one-half story with first floor slightly above ground, a one-story with basement, a one-story with floor slightly above ground, and a one-story with concrete floor slab directly on the ground.

The exterior walls, ceilings, and the floor in most cases are well insulated. The exterior walls consist of solid brick and wood siding, brick veneer, brick veneer and clapboard, clapboard and asbestos siding. The windows in all cases are storm sash or double glazing.

Sheet metal ducts are used to circulate the warm and cold air between the unit and the conditioned space. The supply and return grilles vary in location and design. One system employs ceiling outlet grilles and exterior baseboard return grilles; one, ceiling outlet grilles with floor returns near the outside walls; one, baseboard supply and baseboard return grilles; and two, internal high sidewall supply grilles and low exterior baseboard return grilles.

A summary of the pertinent design information is given by the table on page 142.

Test Data Taken

Testing instruments are installed on each of the five systems to obtain all possible operating and performance data during both the heating and cooling season.

Complete performance data is being taken on all five of the units during the 1948–49 season and will be extended to the 1949–50 season if necessary in order to get more complete and reliable results.

An analysis will be made of all the test data obtained so that the coefficient of performance and cost of operation can be determined at various outdoor temperatures.

A detailed log will be kept of the operating difficulties and necessary design changes. The frequency and time required for the defrosting cycle as well as the reaction of the occupants will also be recorded.

All of the test data for the five residential systems will be summarized and correlated. This summarized data, together with comments and conclusions, will be made available in a useful form at the end of the test period.

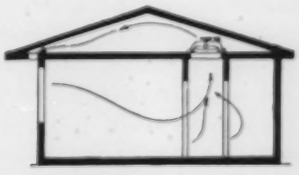
Home Cooling In 2 Easy Steps

with the new Hunter Package Attic Fan

Provide this 38" x 40" ceiling opening

Install the Hunter Package Fan in the Attic ***(Fan, shutter and switch in one compact unit)***

RESULT: cool comfort throughout entire house



A Complete Unit: No expensive, space-consuming suction-box is required for installation . . . just a simple ceiling opening for the Package Fan, plus attic exhaust vent. Shutter and switch are built-in. No ceiling grille or other accessories needed.

Performance Guaranteed: Certified air delivery rating: 9500 CFM, with shutter operating. Fan guaranteed for five years, motor for 1 year. Basic design features have been proved in thousands of homes. Highest quality construction assures quiet, trouble-free operation. See our Section in Sweet's. Or write for Architect's Data File.

HUNTER FAN & VENTILATING CO., INC.

396 S. Front St., Memphis, Tenn. • Exclusive Fan Makers Since 1886

Hunter Package Attic Fan

All Patent Rights Reserved

(*Continued from page 149*)

Seams taped and sealed with special cement become almost invisible, the manufacturer reports. Injuries like cigarette burns and stains can be repaired by cutting out the damaged area and cementing a matching piece of carpet into place.

The Royl-Aire is described as easy to clean, since dirt is stopped at the sealed "skin" surface of the sponge rubber base instead of sifting through the carpet to the surface below it.

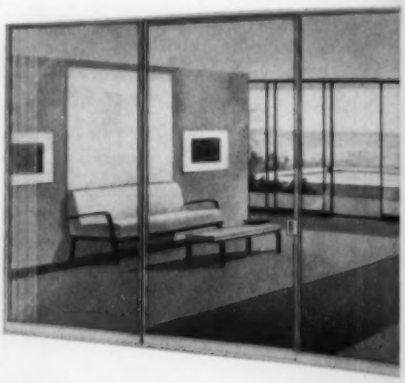
Patterned, frieze, crushed mohair and two-tone Moresque loop weaves are available in a range of colors. The Royal Rubber Co., Akron 14, Ohio.

SLIDING GLASS DOORS

Side-sliding steel-sashed glass doors are now offered for use when large, space-saving glazed doors with unrestricted glass areas are desired in residences, for indoor-outdoor living, offices, apartments, hospitals and schools.

Equipped with hardware of solid brass or aluminum, the doors are fabricated of heavy phosphor-bonded steel, prime-painted with high quality lacquer, or in stainless steel sections, and feature concealed welding.

Doors slide quietly on sealed, ball-bearing bottom rollers 2 in. in diameter,



Steel-sashed glass doors feature quiet operation, aluminum or brass hardware

and have rubber guide rollers at top. Sliding sections are removable for adjustment of all moving parts.

Arcadia doors are available in standard types and sizes. Arcadia Metal Products, Inc., 324 N. 2nd Ave., Arcadia, Calif.

STAINPROOF BATHTUB

Stainproof porcelain enameled bathtubs which are said to include easy cleaning as well as beauty and durability among their many advantages are available to current home owners as well as home builders.

Newer style bathtubs have a high tiling-in flange where the tub is installed against the wall to prevent seepage of water to the ceiling below.

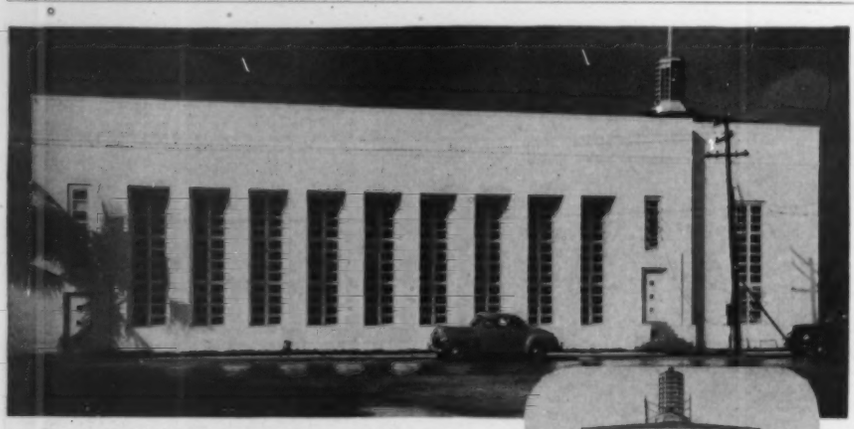
Flat safety bottoms, vertical sides and wide rim seats are other features of the new bathtubs. Briggs Manufacturing Co., Detroit 11, Mich.

INDUSTRIAL SIGNAL SYSTEM

Multiple signal and alarm systems called *Panalarms* which are designed to make possible safety shutdowns, sequencing or inter-locking of plant operations are now on the market.

A series of lamp bulbs set in a cabinet glow dimly during normal operation. An abnormal condition causes two bulbs (red and white) to go on and a warning horn or other device to sound.

(*Continued on page 188*)



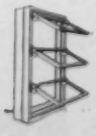
ALLAPATTAH BAPTIST CHURCH
MIAMI, FLORIDA
Wallace M. and Robert E. Baxter, *Architects*

In the front view, the placement of the movable sash in relation to ventilation requirements is clearly visible. In the main auditorium, each tier has three separately operated sections, giving complete ventilation control over all parts of the auditorium.

Effective, Economical Auditorium Ventilation by Natural Means...

• Gate City Awning Windows offer unmatched flexibility of ventilation by taking advantage of natural forces. On hot days, when ventilation is needed most, they deflect the currents of outdoor air toward the ceiling and keep the air mass moving, with comfort benefits to the audience or congregation. Without noise or other distraction they may be adjusted by a small handle. Even rainy day ventilation is practical. Rigidly constructed of wood, these windows do not flutter or rattle. They cannot be slammed. Movable units may be placed without regard to height above the operator. All hardware, including the thrust arms, is virtually unnoticeable.

In your next auditorium project, substantial economies in ventilating equipment may be possible by specifying Gate City Awning Windows—the windows that put Nature to work. For further information, see Sweet's or write to Gate City Sash & Door Co., Dept. R-5, Fort Lauderdale, Florida.



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GENERAL PORTLAND CEMENT COMPANY

manufacturers of

Trinity White PORTLAND CEMENT

is pleased to announce its co-sponsorship of a nation-wide

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Conducted by

PROGRESSIVE ARCHITECTURE Magazine for the design of NATIONAL HEADQUARTERS BUILDING for

UNITED STATES JUNIOR CHAMBER OF COMMERCE

which will be dedicated as a living memorial to those of its members who gave their lives in World War II

We hope that architects everywhere will take active interest in this competition. The full program was carried in the March issue of Progressive Architecture. A copy of the program may be obtained from that magazine or this sponsor.

Also available are two pieces of literature describing specific uses of Trinity White Portland Cement. These are:—

1. Architectural details, data and photographs showing the use of Architectural Concrete Units made with Trinity White Portland Cement for the Prudential Building, Los Angeles, California.

2. Construction details for uses of terrazzo made with Trinity White Portland Cement for floors, shower stalls, stairways, wainscots, etc.

Address: General Portland Cement Company, 111 W. Monroe St., Chicago 3.

Trinity White

PORTLAND CEMENT

(*Continued from page 186*)

Pressure on an acknowledging button by an operator stops the horn and extinguishes the white bulb, but the red light remains on until the trouble is corrected. Any remote switch, thermostat, or float switch can be connected to close (or open) the relays that energize the unit.

Cabinets are available in multiple units up to 12 in a single cabinet. The systems are completely wired and only simple wiring connections to terminal blocks are needed in the field. Panalarm Products Inc., 7218 N. Clark St., Chicago 26, Ill.

PIPE FOR RADIANT HEATING

Buttweld pipe especially adapted for radiant heating is now being produced by Jones & Laughlin Steel Corporation. The first large-scale application of this manufacturer's pipe is in Ohio State University's $8,000,000 medical center, now under construction at Columbus, Ohio.

The pipe is made of soft open hearth steel of bending quality which is designed to provide ease of fabrication for such service.

In the medical center's radiant heating systems, panels are fabricated from ¾ and 1 in. buttweld steel pipe, coiled back and forth in a continuous regular pattern with one inlet and one outlet.

Buttweld steel pipe, designed for ease of fabrication for radiant heating, is being used in Ohio State's new medical center

In making the panels, 21-ft. lengths of pipe are used, bent at the correct lengths to form successive (sinuous) coils in a panel of uniform width. After bending, each length of pipe is welded to the next length to form the panel.

The panels are installed in ceiling or floor construction after careful pressure testing by compressed air. Ceiling panels are supported by angles welded to the pipe and running the entire length of the panel. The angles are bolted to ½-in. rods with threaded ends which are securely fastened to the concrete ceilings.

After the panel is in position, the underside of the concrete ceiling is sprayed with insulating material. Metal lath is wired to the under side of the panel and covered with a ¾-in. plaster ceiling.

Floor panels are buried in concrete flooring. Jones & Laughlin Steel Corp., Pittsburgh 30, Pa.

RADIANT BASEBOARD

Designed for use with hot water heating systems, the *U. S.-Comfort Ray Radiant Baseboard* distributes heat

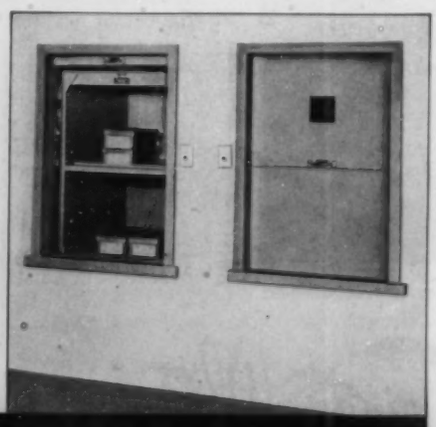
(*Continued on page 190*)

Sedgwick
DUMB WAITER
DOORS
—A Very Important "Assist"
in Satisfactory Dumb Waiter Service

Dumb Waiter Doors are as important for efficient operation as is the selection of satisfactory dumb waiter units. Sedgwick Dumb Waiter Doors are of durable steel construction, have stainless steel sills and can be used with electric or hand power dumb waiters—or for protecting the landing openings of conveyors, laundry and package chutes and other types of floor-to-floor transportation equipment.

Available with approved Underwriters' Label where required, Sedgwick Dumb Waiter Doors are finished in appearance, easy of operation, sturdy and come in four general types, including bi-parting, slide-up, slide-down and hinged. Doors and frames are completely factory-assembled units, convenient for setting in place as hoistway walls are built.

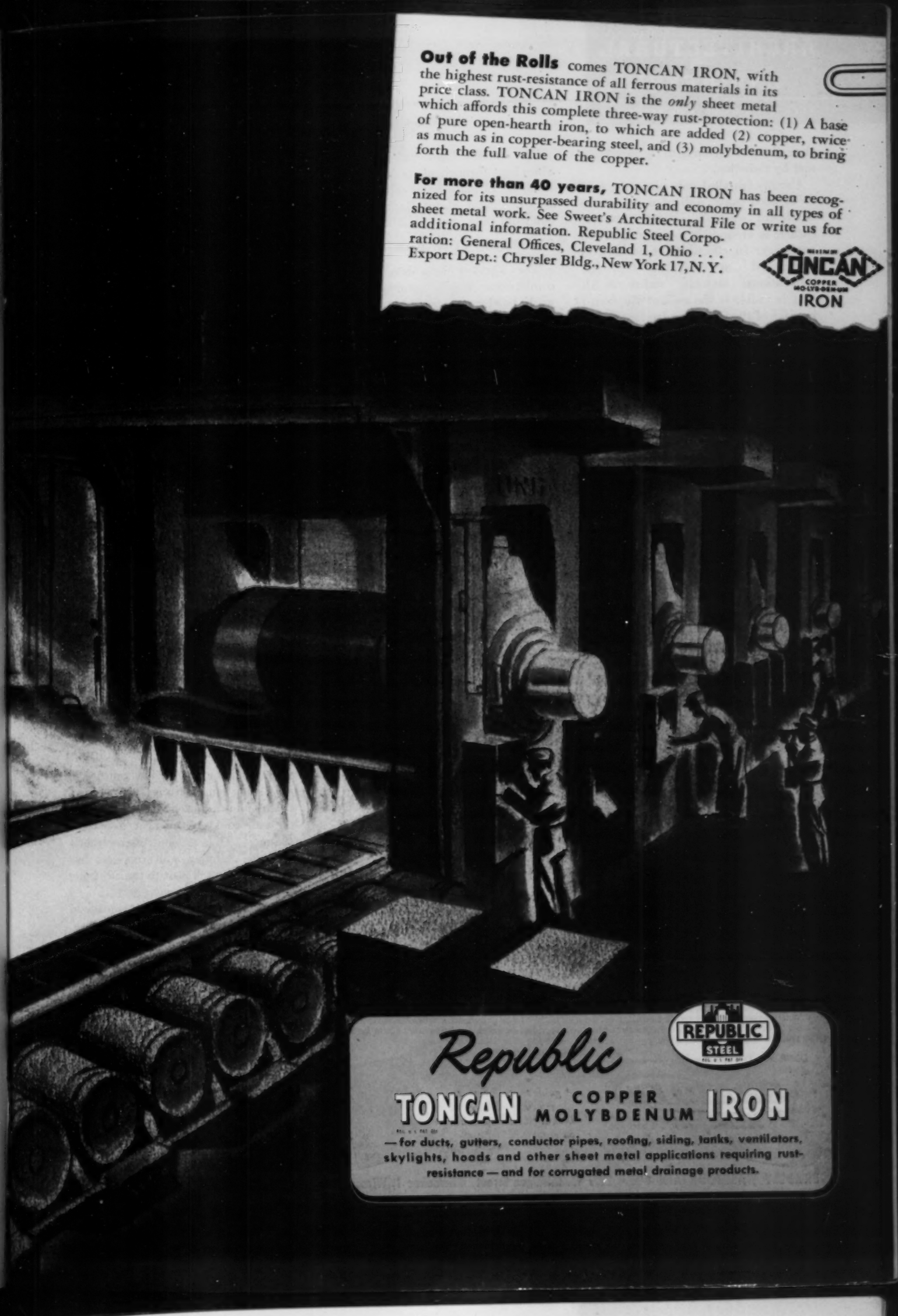
Specify Sedgwick Dumb Waiter Doors for best performance and ultimate economy. They are backed by Sedgwick's 55-year-old experience in planning, engineering, manufacturing and installing of dumb waiters and elevators for all purposes.



Sedgwick Dumb Waiters are available for prompt delivery in a variety of standard sizes and types. The Electric Roto-Waiter and the Electric Traction Dumb Waiter, with capacities up to 500 lbs., are leaders in the power-controlled field. Hand operated units of unusual merit and ease of operation are designed for many uses where less expensive equipment is desired, or when frequency of use is less.

Write for Illustrated Booklet and Complete Information

Sedgwick MACHINE WORKS
142 West 15th Street, New York 11, N. Y.
ELEVATORS · DUMB WAITERS · RESIDENCE ELEVATORS · STAIR-TRAVELORS
ROTO-WAITERS · SIDEWALK ELEVATORS · FREIGHT ELEVATORS · DUMB WAITER DOORS
BUILDERS OF VERTICAL TRANSPORTATION SINCE 1893



Out of the Rolls comes TONCAN IRON, with the highest rust-resistance of all ferrous materials in its price class. TONCAN IRON is the *only* sheet metal which affords this complete three-way rust-protection: (1) A base of pure open-hearth iron, to which are added (2) copper, twice as much as in copper-bearing steel, and (3) molybdenum, to bring forth the full value of the copper.

For more than 40 years, TONCAN IRON has been recognized for its unsurpassed durability and economy in all types of sheet metal work. See Sweet's Architectural File or write us for additional information. Republic Steel Corporation: General Offices, Cleveland 1, Ohio . . . Export Dept.: Chrysler Bldg., New York 17, N.Y.

TONCAN COPPER MOLYBDENUM IRON

Republic

REPUBLIC STEEL

TONCAN COPPER MOLYBDENUM IRON

—for ducts, gutters, conductor pipes, roofing, siding, tanks, ventilators, skylights, hoods and other sheet metal applications requiring rust-resistance—and for corrugated metal drainage products.

(*Continued from page 188*)

throughout the room both by convection and by radiation.

Usually installed only along the cold or exposed outer wall of a room, the baseboard may be extended around corners or around the entire room when necessary. In effect, the baseboard is "concealed" as compared with the conventional standing radiator. All that is visible is the radiant baseboard in place of the usual wooden baseboard.

The radiant baseboard, which provides heat throughout its entire length, is about as high as an ordinary baseboard. United States Radiator Corp., 300 Buhl Bldg., Detroit, Mich.

BATHROOM COMBINATION

The *Vanitory* is a lavatory-vanity combination which features a rimless wash bowl surrounded by a dressing table surface of laminated plastic.

Laminated plastic sheets around wash bowl provide area for toilet articles

Units will be available in a wide range of designs and can also be custom-built to specifications. Standard procedure calls for laminating the plastic sheets onto plywood.

Designs include picture mirrors, built-in laundry hampers, twin bowls, step-ups for children, towel storage, medicine chests, and concealed plumbing. More than 40 color patterns are available. The Formica Co., 4614 Spring Grove, Cincinnati 32, Ohio.

PACKAGED CHIMNEY

The *Van-Packer Chimney*, a packaged chimney shipped complete and ready for installation, is listed by Underwriters for use with any fuel in one and two story houses with or without a basement.

Each chimney is tile lined with acid proof, high temperature (2000°) refractory and has a 3-in. lightweight insulating wall to keep the heat inside the chimney. The manufacturer reports that the chimney wall conducts less than half as much heat to the adjoining wood as a brick chimney.

The Van-Packer Chimney is made in 2-ft. and 1-ft. sections for easy handling. The Van-Packer Corp., Field Bldg., 135 S. La Salle St., Chicago 3, Ill.

SMOKE DETECTOR

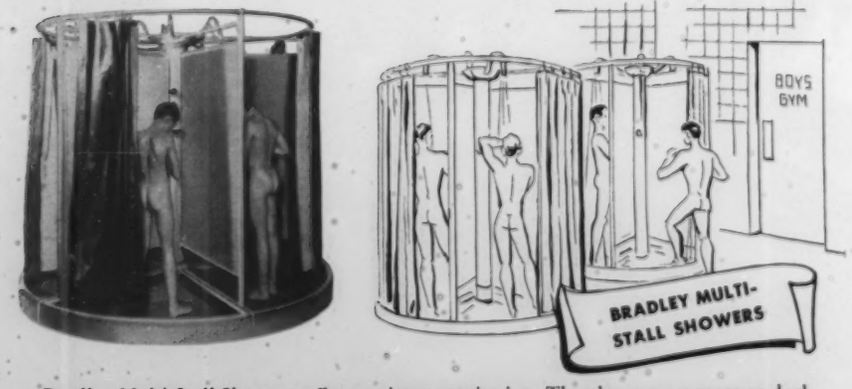
Early detection of incipient fires in hazardous plant and warehouse locations is the function of a single unit photo-electric smoke detector which is now available.

Through an individual piping system, a continuous sample of air is drawn from the protected space into an analyzer tube. There the sample passes through a filter screen to remove dust and dirt,

(*Continued on page 192*)

BRADLEY SERVES EVERY WASHING NEED

For the main washrooms Bradley Circular Washfountains provide modern, sanitary washing convenience. One 54-in. Bradley serves 8 to 10 students simultaneously with an ever-clean spray of running water. Foot-control saves hands from contagious wash-basin contacts. Sprayhead eliminates many faucets and cuts water consumption 70% to 80%.



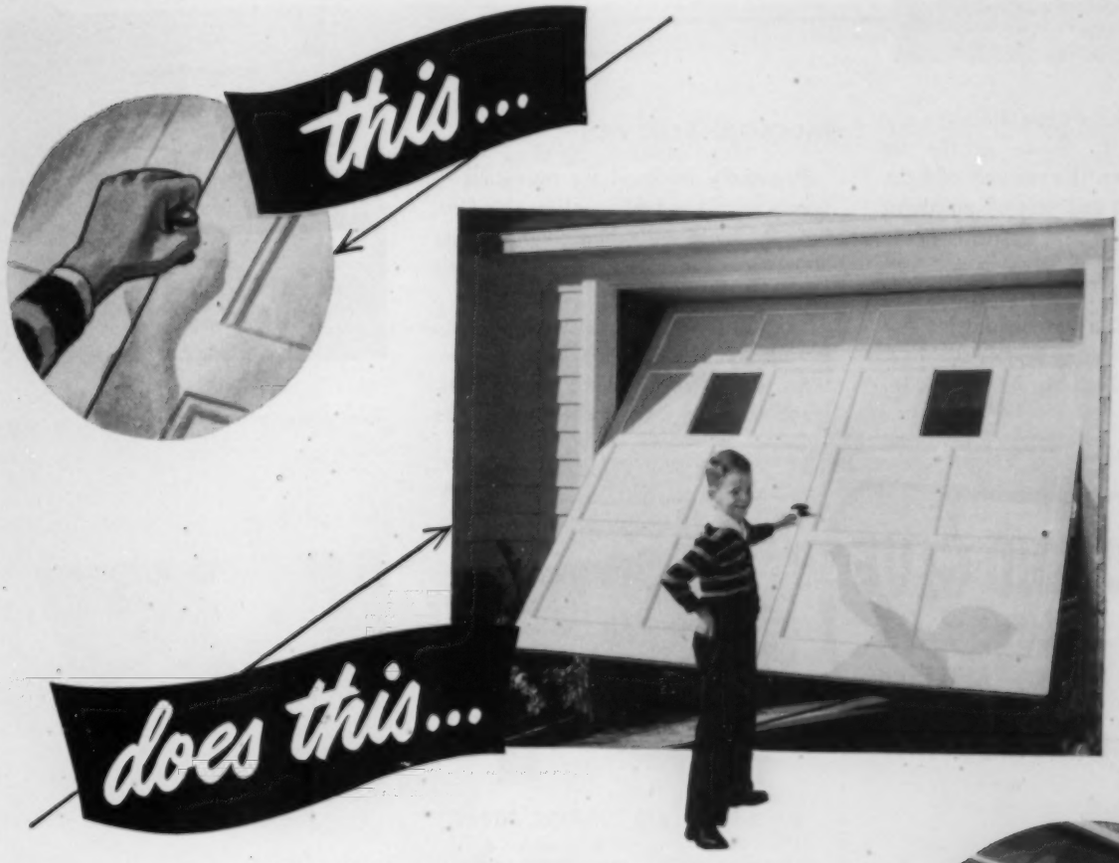
Bradley Multi-Stall Showers offer maximum sanitation. They have no corners or dark areas to collect dirt, and require a minimum of attention. Bradley Showers come partially assembled for quick installation on any kind of floor including wood. Available in 5- or 3-Stall Units, they reduce piping connections needed, cut hot water costs and reduce water consumption.

Distributed Through Plumbing Wholesalers

BRADLEY *washfountains* AND *multi-stall showers*

A guide to washroom arrangements — illustrated Booklet 4701 will be mailed on request.

BRADLEY WASHFOUNTAIN CO. • 2227 W. Michigan Street, Milwaukee 1, Wisconsin



when it's a CURTIS OVERMATIC!

No strong muscles needed to open a Curtis Overmatic garage door. One turn of the handle—and the door glides up and over. Anyone who can open a house or car door can open the Curtis Overmatic—and a slight pull closes it from outside or inside.

In the Overmatic, Curtis answers the problem of providing a truly modern overhead garage door at *moderate cost!* The Overmatic fits an opening 8′x7′, providing ample clearance for any style car. It comes as a complete unit with all hardware, ready to install.

Greater Strength with the New Prespine Panels

The door panels in the lightweight Overmatic are made of Curtis Prespine—a superior new wood product manufactured exclusively by Curtis. Prespine Panels will resist heavy impact blows—won't mar or scratch readily . . . won't splinter or chip. Prespine has superior bending strength, withstands warping, shrinking and swelling and it provides an excellent bond for paint or stain.

Inside view of Overmatic garage door when "it's up and over." Only 2 inches of overhead clearance required—far less than needed by most overhead doors. Note simplicity of operating hardware. Overmatic can be installed within 3½ inches of house door in side wall.

1866 CURTIS WOODWORK

When in New York: visit the Curtis Woodwork display at the Architects' Samples Corporation, 101 Park Avenue.

Curtis Companies Service Bureau
AR-5-0 Curtis Building, Clinton, Iowa
Gentlemen:
Please send me literature on the Curtis Overmatic garage door.

Name.....

Address.....

City.....*State*.....

I am ( ) Architect ( ) Contractor ( ) Prospective Home Builder ( ) Student
(Please check above)

(*Continued from page 190*)

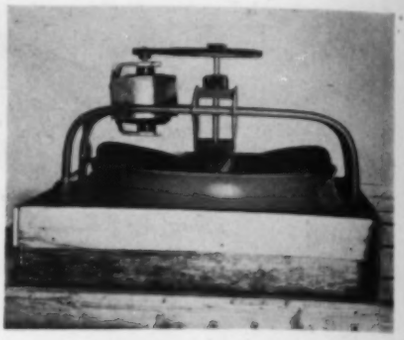
then into a beam of light focused on a photoelectric cell. Smoke in the air sample cuts down the amount of light reaching the cell and sets off an alarm connected through an electrical circuit to a control panel.

The detector is described as a useful adjunct to built-in carbon dioxide fire extinguishing systems. Walter Kidde & Co., Inc., 40 E. 34th St., New York 16, N. Y.

PACKAGED ATTIC FAN

Especially designed for operation in homes with low-bridge attics, the *Ventura Packaged Attic Fan* requires only 30 in. clearance between fan blades and attic ceiling.

The fan, which is said to be easy to install in 10 steps without costly alterations, draws cooler night air into the home through windows and dispenses daytime heat via attic louvers or vents.



The attic fan shown here is designed especially for houses with low attics

The Ventura features a polished aluminum grille which opens and closes automatically; V-belt drive with low fan speed; rubber-mounted ball-bearings; and a totally enclosed, resilient-mounted motor. American Blower Corp., Detroit 32, Mich.

ODORLESS DISINFECTANT

San Pheno X, a newly developed and tested germicide for all disinfecting purposes, is described as non-corrosive, non-irritating, non-caustic, and powerful as well as economical.

The germicide's most unusual characteristic is the fragrant odor it is said to leave in place of the usual carbolic smell.

San Pheno X has a phenol coefficient of 10 against E. Typhosa and of 13 against Staph Aureus (the pus forming bacteria) when tested by the standard F. D. A. methods. Standard dilution is 1 part San Pheno X to 200 parts water.

The germicide is recommended for a wide variety of uses in institution and home. Huntington Laboratories, Inc., Huntington, Ind.

BLUEPRINT CABINET

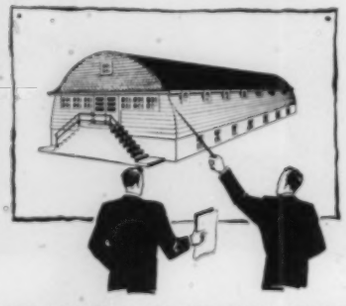
Built of heavy gauge furniture steel, a new blueprint cabinet features smooth gliding drawers on ball-bearing rollers.

A lift compressor in the front of the

(*Continued on page 194*)

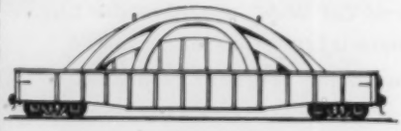
WOOD AND GLUE BUILT THIS GYMNASIUM

Let an Architect tell how **RILCO** *helped*

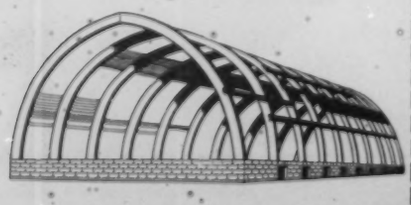


LOW BUDGET, BIG BUILDING, SHORT TIME . . . that was our problem. A gym must have *height* . . . must house indoor ball games, basketball, large classes and have plenty of room for spectators. How to get all that on a slim budget? Naturally, we thought immediately of wood . . . and Rilco!

WE MAILED PRELIMINARY PLANS to Rilco...and things began to happen *fast!* Back to us came Rilco's preliminary engineering drawing, showing exactly how Rilco Glued Laminated Arches could be adapted to the job. With this data we completed our general plans incorporating Rilco construction.



THE LONG, CLEAR SPANS our design called for were no great problem for Rilco engineers. Their arches did the job beautifully . . . and economically. Every arch was delivered to the job ready to put up . . . accurately cut to fit, accurately drilled to take the special hardware that was furnished.



WE SAVED LABOR COST, TOO, because there was no need to fit the Rilco arches on the job. The contractor's regular carpentry crew did the job in record time. We're glad to know Rilco also makes trusses, arches and rafters for churches, auditoriums, garages, theaters . . . in fact almost any sort of building. We'll certainly use them again. Maybe you should, too.

RILCO
WORKS WONDERS WITH WOOD
Laminated
PRODUCTS, INC.
1670 First National Bank Building
St. Paul, Minnesota

. . . but what about the indoor climate?

Landlubbers get all the salty flavor of a sea-going cruise right in their rooms at the Saxony Hotel, Miami, Florida. Here is an outstanding example of *Thermopane's** ability to make interiors more comfortable in any climate. Picture windows of *Thermopane* offer a "shipdeck" view of the ocean and assist in assuring precise control of the air conditioning and heating system.

Thermopane's advantages aren't confined to reducing transmission of heat or cold. Used in commercial structures of all types, this double-glass insulating windowpane deadens distracting exterior noise . . . keeps frost and condensation on windows to a minimum . . . saves fuel.

Specify *Thermopane* in the new or remodeled buildings you design. You'll be giving your clients one of the best investments they ever made.

Contact your Libbey·Owens·Ford Glass Distributor for complete technical data and standard sizes, or write us direct.

*®

L·O·F *Thermopane*

MADE ONLY BY LIBBEY·OWENS·FORD GLASS COMPANY

2659 Nicholas Building, Toledo, Ohio

Cutaway view of Thermopane

For better vision specify *Thermopane* made with polished plate glass.

(*Continued from page 192*)

drawer and a hood in the rear are designed to prevent the filed material from curling, creasing or tearing.

The cabinets come in olive green or gray crinkle finish and in two sizes: one with inside drawer dimensions 37 in. wide, 25 in. deep and 2¼ in. high and the other with inside drawer dimensions 43 in. wide, 32 in. deep and 2¼ in. high.

The five-drawer units can be stacked to meet individual requirements and an automatic plunger-type lock controlling all five drawers and a 7½ in. high base are available. Cole Steel Equipment Co., 285 Madison Ave., New York 17, N. Y.

WATER HEATER

For use in small restaurants, small apartment houses, and large homes where larger commercial water heating units cannot economically be operated, a new water heater featuring forced flow recovery circulation is on the market.

The Smith-Burkway Model 417 is a tank heater, with straight on-off operation, and therefore cannot be used for instantaneous, booster, or booster recovery installations; but the circulation

An intermediate-sized water heater for use in small restaurants, large houses

feature is said to provide more even tank temperature and make it possible to install heater and tank in separate locations or on different levels.

Safety equipment features include high limit control, a finned heat exchanger for instant response to hot water demands, a burner employing two stages of primary air injection and a secondary air supply, and an efficient "water-wall" combustion chamber of tightly wound copper coils.

Model 417 is approximately 4 ft. in over-all height and 18 in. in diameter. A. O. Smith Corp., Special Products Division, Toledo, Ohio.

ENGLISH BRONZE CRAFT

Grilles, doors, plaques, letters and wrought iron gates from Birmingham Guild, Ltd., architectural bronze designers and craftsmen of Birmingham, England, have returned to the American market.

A permanent display of Guild articles has been established at Architects Sample Corp., 101 Park Ave., New York City. Fred L. Stuart, Room 1111, 33 W. 42nd St., New York, N. Y., is the Guild's American representative.

GLASS WITH SEALED-IN LOUVERS

Fota-lite, described as an improved form of louver panel giving "egg crate lighting without the egg crate," consists of photosensitive glass in which three dimensional images or designs can be

(*Continued on page 196*)

3 GYMS IN ONE

From Coast to Coast the HORN FOLDING BLEACHERS AND HORN FOLDING PARTITIONS are making one Gym do the job of three. With emphasis on careful planning Horn offers a "tested" solution to gym problems.

HORN FOLDING BLEACHERS-HORN FOLDING PARTITIONS

HORN, with years of experience and skill, offers to every school planner the services of the Horn Engineering Department. Horn installations are guaranteed.

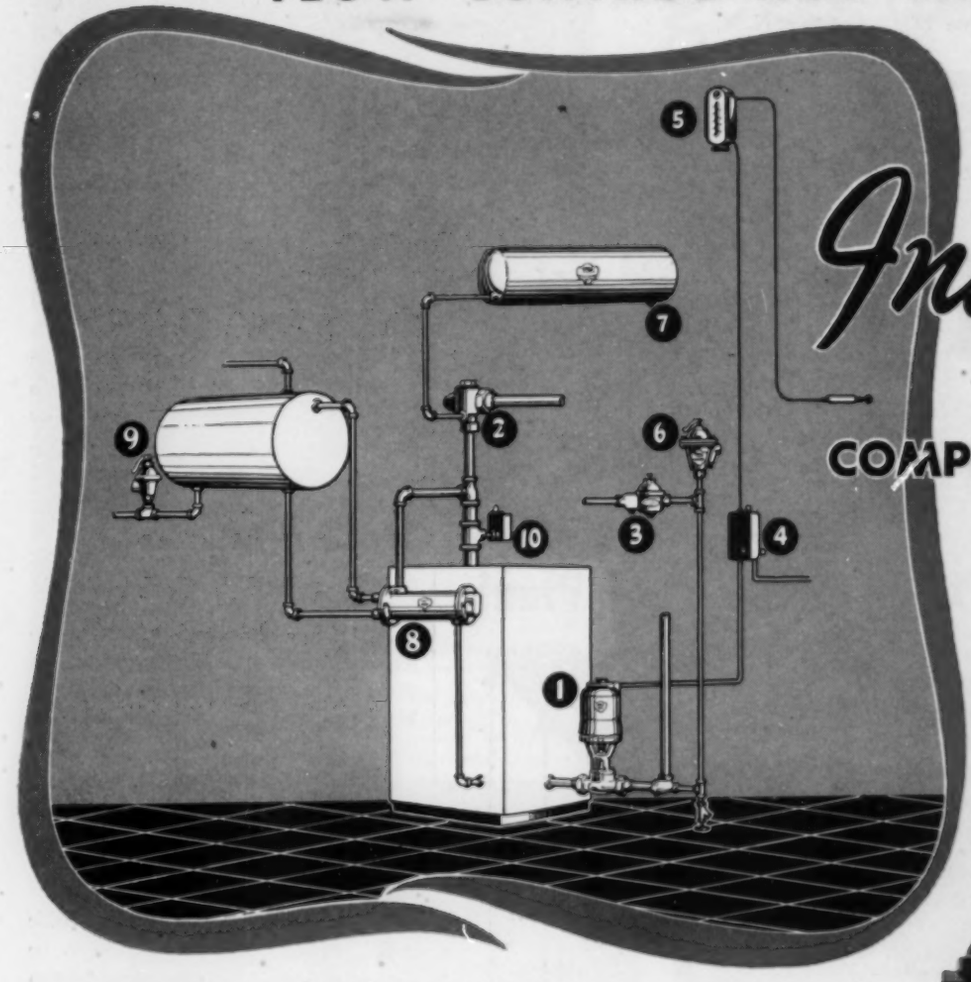
FREE:

Write for the HORN BOOK, *Modern* SCHOOL PLANNING
A complete book with photographs, plans and specifications.

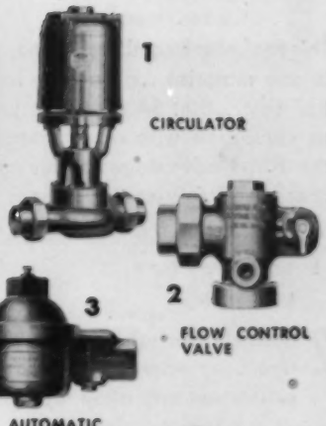
HORN BROTHERS CO.
A DIVISION OF HORN INDUSTRIES
FORT DODGE, IOWA — ESTABLISHED 1909

THRUSH FORCED CIRCULATING

FLOW CONTROL HOT WATER HEAT



Install THE COMPLETE SYSTEM



ONE RESPONSIBILITY

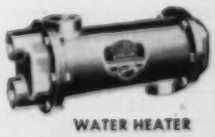
WHEN you install Thrush Flow Control Systems you can make each a complete Thrush installation. There is no need to have any other makes of equipment to "fill in" because Thrush offers a complete line of hot water heating controls, each designed to do a specific job. Back of each device is over twenty-five years' experience devoted to just one thing and one thing only . . . improving the efficiency of forced circulating hot water heating. For more information, see our catalog in Sweet's or address Dept. J-5.

BRONZE ADJUSTABLE TEE

CAST IRON ADJUSTABLE TEE

WATER TEMPERATURE CONTROL

HIGH PRESSURE WATER RELIEF VALVE



WATER HEATER

FORCED Flow control THRUSH HOT WATER HEAT CIRCULATION

H. A. THRUSH & COMPANY • PERU, INDIANA

(*Continued from page 194*)

photographically reproduced.

Louvers, in the form of planes of opalescence, are ingrained in egg crate pattern throughout the width, length and depth of a ⅛-in.-thick pane of glass.

Since louvers are imbedded in the glass, the manufacturer explains, fixtures can be sealed to prevent accumulation of dust and other foreign matter on tubes and reflectors.

Another advantage is said to be elimination of color changes in light which might occur when metal and plastic louvers are used. Corning Glass Works, Corning, N. Y.

INDUSTRIAL TOILET SEATS

Model LP-20 and LP-40 industrial toilet seats are now available in white solid plastic as well as the usual black.

The line features sanitary open design and a self-raising and self-sustaining hinge, plastic covered and sealed against moisture and dirt.

The new white plastic is described by the manufacturer as long-wearing and resistant to chipping, peeling and fading. Sperzel Co., 123 14th Ave. S., Minneapolis 4, Minn.

CLAY CHIMNEY TOP

Especially selected and high temperature vitrified clay makes *Perma-Top*, the clay chimney top which is designed to eliminate down draft and to serve as a spark arrester for house chimneys.

Perforations on the sides permit gradual escape of fly ash and the solid top is removable for cleaning.

Considered particularly adaptable where resistance to the elements, to chemicals, gases and heat is of major importance, Perma-Top is said to provide the maximum in fire protection. The Perma-Top Co., 410 Shadyhill Rd., Pittsburgh 5, Pa.

PLASTIC SPRAY

A plastic spray for protecting and enhancing metal, wood, leather, paper and a variety of other surfaces is being marketed in a container which serves also as the applicator.

Pressure on the non-corrosive Bakelite top of the container releases a fine spray of *Plastic Coat*, which is applied directly on the object to be protected. It is said to dry in about two minutes.

Described as a clear, glossy, flexible finish, Plastic Coat is reported to be especially useful for preventing tarnish and protecting the polish of brass, bronze and chrome in the home as well as in public places, and to give a protective coating to drawings, tracings, blueprints, maps and photographs. Bridgeport Brass Co., Bridgeport 2, Conn.

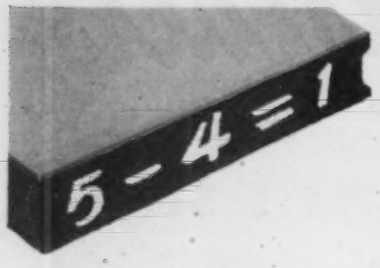
TROLLEY BUSWAY

The *LTG Flex-A-Power* plug-in or trolley busway has been designed to provide both trolley power take-off and a continuous outlet for fluorescent lights and small power tools.

Simplified hanging and joining methods are reported to speed up installation 30 per cent. To save space and make for compactness, LTG has two or more circuits that can run in one housing and still be controlled separately. It is rated 50 amps — 250 v, a-c or d-c.

LTG is built in standard fittings like elbows and radius sections so that custom-engineered installations can be

(*Continued on page 198*)



Save $1

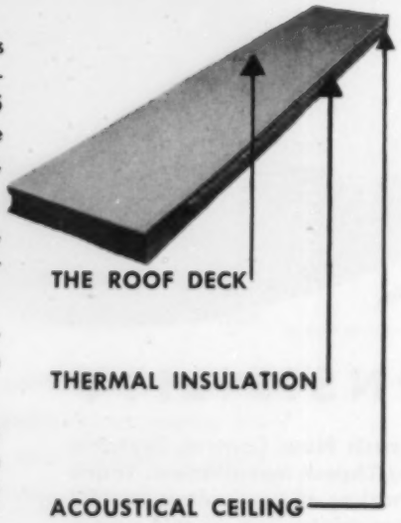
OUT OF EVERY $5
by using
the Durisol Insulated Roof Plank

This roof plank combines so many functions in one material...all at one low installation cost...that **$4 does the work of $5** as compared with other materials. Note the 3-in-1 advantages of this light-weight, precast, factory-coated plank:

1 Fireproof, reinforced, cement-surfaced, and ready for application of the built-up roofing.

2 Because Durisol itself is such an effective barrier against heat losses, no additional insulation is required.

3 Noise-deadening ceiling at no extra cost... distinctive and pleasing in appearance, with a sound absorption coefficient of 0.87 at 512 cycles.



DURISOL is made from chemically mineralized wood fibres bonded with Portland cement and moulded under pressure. It is unaffected by moisture and is proof against rot, mould, vermin, termites—proved incombustible by laboratory tests.

Thickness	Width	Maximum Span	Weight per sq. ft.	Long Edge	Load
3¼"	16"	6'8"	15 lbs.	Tongue and Groove	40 lbs. per sq. ft. live load with high safety factor.
4¼"		8'	18 lbs.		

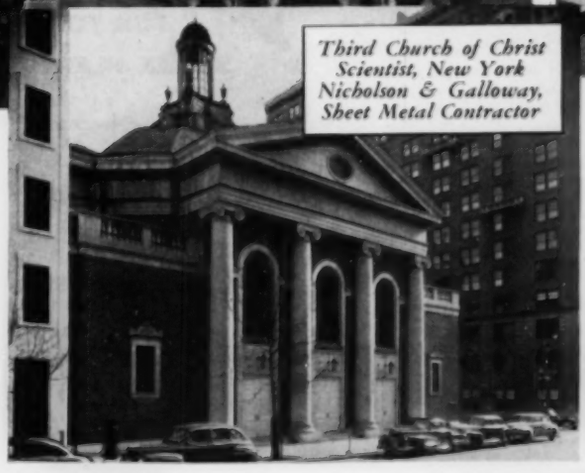
For complete information, write for folder (A.I.A. File Number 4-K). Also see catalog 3c/13a, Sweet's File Architectural, 1949.

DURISOL, INC. 420 Lexington Avenue, N. Y. 17, N. Y.

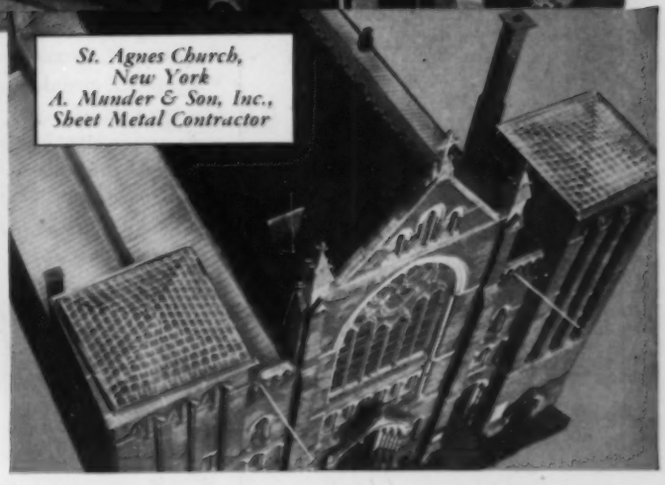
Revere Copper REGULARLY "goes to church"

St. Patrick's Cathedral, New York
Jacob Ringle & Son, Inc., Sheet Metal Contractor

Central Synagogue, New York
Sobel & Kraus, Inc., Sheet Metal Contractor



Third Church of Christ Scientist, New York
Nicholson & Galloway, Sheet Metal Contractor



St. Agnes Church, New York
A. Munder & Son, Inc., Sheet Metal Contractor

Common Sense says:

"Copper is the common sense material for lasting *roofs, gutters, flashing."*

Ever since copper rolled by Paul Revere was installed on the roof of Old North Church in Boston, it has been traditional for churches in every part of the country to have roofs, spires, gutters and flashing constructed of Sheet Copper. The reason is simple: *dollar for dollar, it makes sense to use copper whenever you want lasting sheet metal construction.* For of all the commonly-used sheet metals, copper has *proved itself* to be the most enduring when exposed to the elements. And copper is the one metal that becomes more beautiful with age.

And whenever you design or install sheet copper construction, it will pay you to take full advantage of the new design and installation data developed by the Revere Research Laboratories. You'll find these data in Revere's book, "Copper and Common Sense," an authoritative manual of sheet copper construction that has been widely distributed to architects and sheet metal contractors. There is probably a copy in your files. Be sure to refer to it as your guide to finer and more durable sheet copper construction.

Revere sheet and roll copper, lead-coated copper and other Revere quality materials are available from leading distributors throughout the United States. A Revere Technical Adviser will always be glad to consult with you without obligation.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

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Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere.

New SAFETY RECEPTACLE

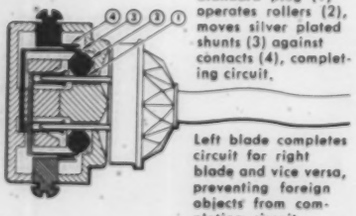
MAKES CONTACT ONLY WHEN STANDARD CAP IS INSERTED

HUBBELL'S SP-49

The *SAFETY-PLUS Receptacle

Actual tests prove it to be Safest Receptacle ever designed

- Makes contact *ONLY* when standard cap is inserted
- Conventional operation . . . double contact springs
- Back or side wired—shallower for more wire room
- Takes polarized or standard caps


Standard plug (1) operates rollers (2), moves silver plated shunts (3) against contacts (4), completing circuit.
Left blade completes circuit for right blade and vice versa, preventing foreign objects from completing circuit.

Featuring an entirely new principle, the Hubbell SP-49 Receptacle was designed to reduce the possibility of accidental shock and burn, makes contact ONLY when standard caps are inserted! Pins, wires or other foreign objects cannot energize the unit! The SP-49 provides easier wiring, more wire room, back wiring, washer ears, silver plated contact springs, interlocking bridge and takes standard caps.

For descriptive literature write

HARVEY HUBBELL, INC.

Dept. A-1 Bridgeport 1, Conn.

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 196*)

achieved economically. The Trumbull Electric Manufacturing Co., Plainville, Conn.

FIVE-SIDED ERASER

An eraser made of a new compound which is said to eliminate smears and minimize crumbling is now on the market.

Unusual in design, *Penta-Kleen* has five flat sides for cleaning broad surfaces, 10 sharp corners and five edges for more exacting erasures.

Penta-Kleen does not slide or roll on tilted surfaces, according to the manufacturer. Eberhard Faber Pencil Co., 37 Greenpoint Ave., Brooklyn 22, N. Y.

CHALKBOARD EASILY CUT, MOUNTED

A chalkboard which can be cut to size on the spot and mounted direct to any wall either by nailing or with moulding has recently been introduced.

Videoplate, which weighs less than 2 lb. per sq. ft., is cold pressed into smooth, warp-proof, grainless, moisture-resistant sheets or panels ¼ in. thick, 3½ or 4 ft. wide and in lengths up to 12 ft. A special process then is used to produce the chalk writing surface.

Videoplate is available either in conventional black or in Litegreen. Beckley-Cardy Co., 1632 S. Indiana Ave., Chicago 16, Ill.

AUTOMATIC FURNACE

Designed to meet requirements of anti-smoke ordinances, the *Worsham Minute Stokerette Furnace* features ease and economy of operation.

Coal for 24 to 96 hours, depending on weather, is placed in a coal hopper and then is fed automatically to fire as needed by a water-cooled screw conveyor operating in a special U-shaped grate. The ashes fall off at the end into an ash receiver, which is detached when full, covered with a lid, and then carried out for ash removal.

Automatically controlled by an upstairs thermostat, the furnace is made of No. 8 boiler plate with refractory lined combustion chamber. It is designed especially for high volatile coal but also takes coke, smokeless fuels and anthracite. Worsham Co., Inc., 7329 Lohmeyer Ave., St. Louis 17, Mo.

Investigate!!!

THE AVAILABILITY AND ECONOMY OF FUEL OIL AND TODD BURNERS FOR YOUR BOILER PLANT!

You'll find that for replacement of obsolete equipment or for new installations, Todd Burners will effect savings in fuel and maintenance costs. Skilled Todd specialists, modern Todd facilities—backed by 35 years of engineering experience—guarantee you economical burning of liquid and gaseous fuels. See your local Todd dealer now!

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Combination Oil and Gas Burners

COMBUSTION EQUIPMENT DIVISION

TODD SHIPYARDS CORPORATION

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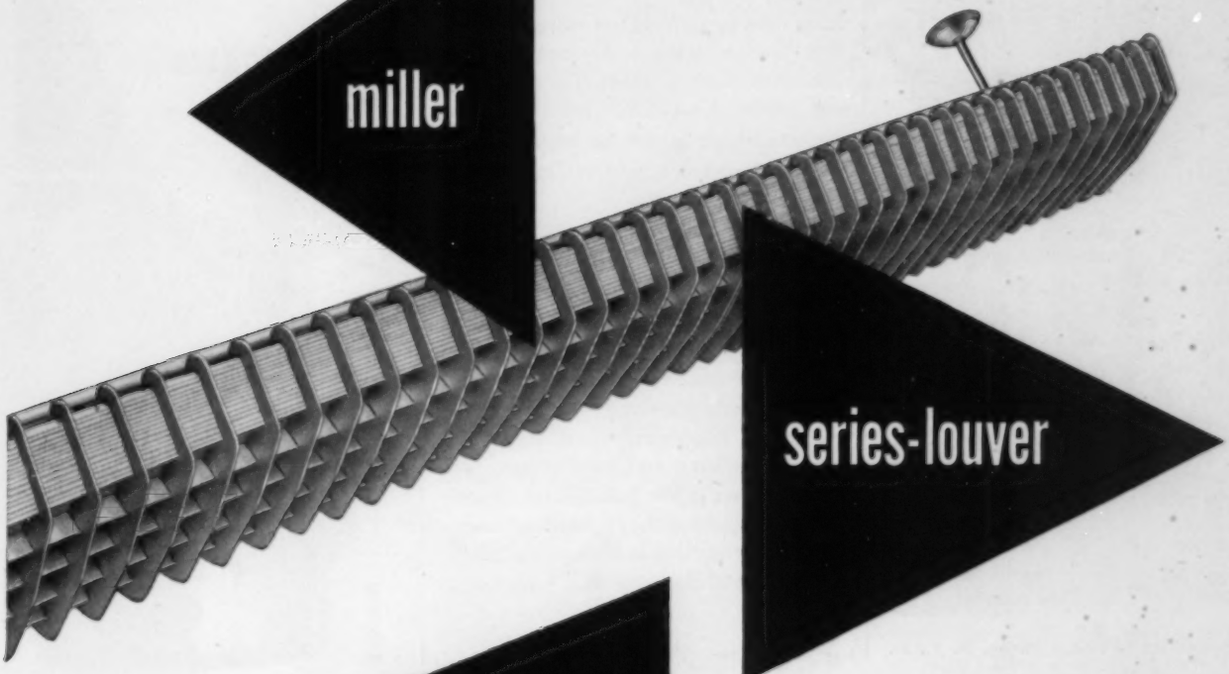
ANNOUNCING



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for commercial and industrial interiors

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New flexibility of application
of the 96 in. slimline fluorescent lamp.
New simplified installation,
operation and maintenance.
Write for miller slimline catalog 2G.

3

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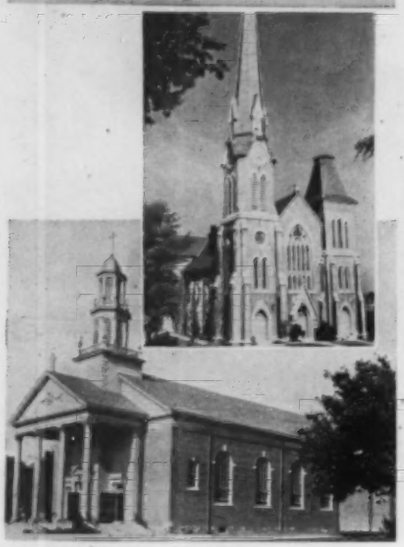
SINCE 1844
ILLUMINATING DIVISION, MERIDEN, CONNECTICUT
ILLUMINATING DIVISION: Fluorescent, Incandescent, Mercury Lighting Equipment; HEATING PRODUCTS DIVISION: Domestic Oil Burners and Liquid Fuel Devices; ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls

Church Heating Need Not Be An Annual Burden



Two Webster Type "R" Church installations: First Presbyterian Church, Ossining, N. Y., St. Anne's Catholic Church, New Bedford, Mass. Architect for St. Anne's Church — Joseph M. Mosher, Providence, R. I.

Vapor heating is ideal for churches —buildings that may require quick heating-up, short "on" periods, long "off" intervals . . . buildings sometimes left unoccupied.

For vapor heating at its best select the Webster Type "R" System. It provides quick response to changes in temperature.

With this Webster System there need be no overheating. Complete shut-off leaves no residual heat in radiators. Thermostats can be set to maintain desired temperature level.

Can be used with Webster Type "WI" Convectors along the walls or under pews; with prefabricated Webster System Convector Radiators concealed in the wall; with quiet, high capacity Webster-Nesbitt Series "R" Unit Heaters in vestibules; with high, ceiling-mounted down blow Units in gymnasiums.

Fuel may be coal, gas or oil . . . firing manual or automatic. The only limitation is that water return to the boiler by gravity flow.

Don't fail to investigate this kind of heating for your building.

Address Dept. AR-5

WARREN WEBSTER & CO.

Camden, N.J.: Representatives in Principal Cities
In Canada, Darling Brothers, Limited, Montreal

Webster HEATING

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 150*)

been used to provide hot water for comfort heating, kitchen and laundry, and tub, shower and lavatory. The residences are described together with a listing of heating requirements. Specifications are given. 12 pp., illus. Surface Combustion Corp., Toledo 1, Ohio.

Convectors

Invisible Warmth. Shows a line of cast iron convectors concealed by inconspicuous sheet steel enclosures for one pipe steam, hot water, vapor and vacuum heating systems. Seven types of enclosures are described, designed for high heat output and good appearance. Also covered in the bulletin are suggestions for installing the enclosures, dimensions and roughing-in data. 8 pp., illus. The National Radiator Co., Johnstown, Pa.*

Wall, Ceiling Panels

Marlite Modern Plastic-Finished Wall and Ceiling Panels. Besides showing typical installations, colors and patterns of Marlite plastic panels, this bulletin includes metal, plastic and Presdwood mouldings and bathroom accessories. Installation instructions and specifications are given. 12 pp., illus. Marsh Wall Products, Inc., Dover, Ohio.*

Paint

Plan Before You Paint Your Plant. This bulletin has been designed to provide industrial architects, engineers, plant superintendents, etc. with a guide to scientific color for industry. A special feature is a dial color selector which allows the user to pick out 108 suitable color combinations, with separate dials for ceiling, wall and dado. A group of color chips is provided together with reflectance values of this manufacturer's paints. 12 pp., illus. Valdura Div., American-Marietta Co., 43 E. Ohio St., Chicago, Ill.

Aluminum Tile

Hastings Alumitile Color Selector. Spiral-bound color card containing 14 shades available on a newly developed aluminum wall tile coated with baked-on enamel. Plastic transparencies having kitchen and bathroom layouts can be laid over the color sheets which are divided so that various color schemes

(*Continued on page 202*)

The Nurse that never Sleeps

Magnetic Type Calling Station

Day or night, there's no let-up in the "special nurse" care of a Couch Signaling System. There's constant security for *every patient* . . . greater freedom for regular nurses, added efficiency.

The magnetic type call station pictured was formerly made by Chicago Signal Co. It is preferred equipment in many hospitals because of the slight pressure required to operate it. The standard locking button and pull-cord stations are also regular items in the Couch Line of hospital equipment.

The Nurse's Call is only part of the versatile Couch electric "nerve system" for hospitals. For full information on Doctors' Paging . . . Doctors' In and Out . . . Fire Alarm . . . Private Telephone . . . Return Call Systems, send for Bulletin H-1.

S. H. COUCH CO., INC.
Department 305A
NO. QUINCY 71, MASS.

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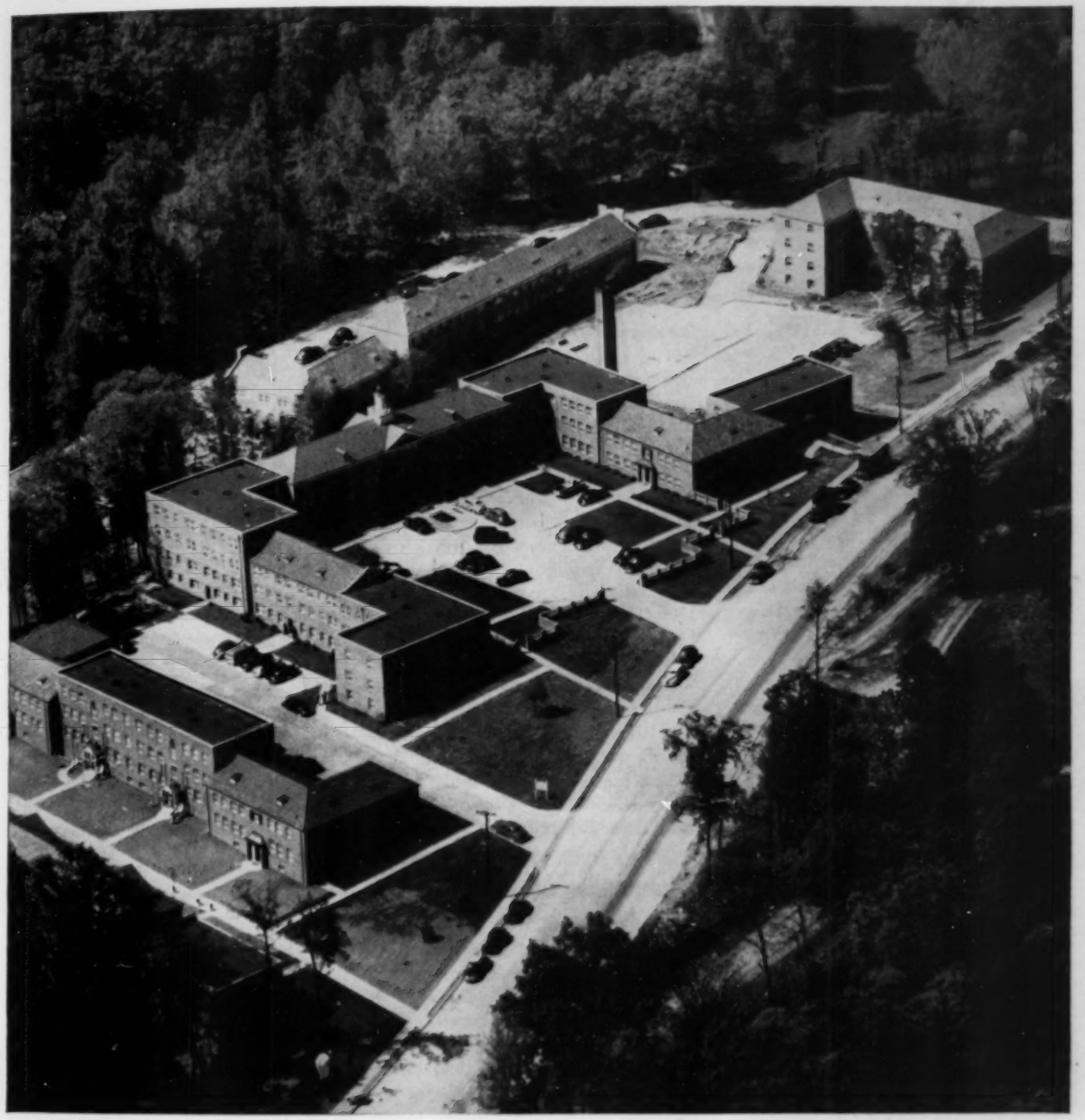

Housing Project Near Washington Has Open-Web Steel Joists—Built to help meet the need for housing in the Washington, D. C., area, this new project at Arlington, Va., known as Frederick Courts, has facilities for 166 families. A Williamsburg-type development, it consists of six 2- and 3-story buildings of rose-range colonial brick. Bethlehem Open-Web Joists are used throughout in the floor construction of each building, in combination with concrete floors and plaster ceilings. This type of construction keeps fire localized for two hours or more, depending upon the type of plaster used, and is also economical, shrink-proof, sound-retardant, and immune to attack by vermin. Complete information about Bethlehem Joists is available in Sweet's. *Architect:* M. Leroy Bagley, Chevy Chase, Md. *Builder:* Jesse Johnson, Arlington, Va.

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LOOK FOR THE ZIGZAG BAGS

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 200*)

can be arranged for top and bottom wall sections. A kit is available to architects which contains various tile shapes and the color selector. Metal Tile Products, Inc., Hastings, Mich.*

Suspended Ceiling Construction

Nailock Method of Suspended Ceiling Construction (Catalog N-1). Describes several recent developments in metal nailing channels used to install suspended ceilings with or without acoustical materials. Besides being used for suspended ceiling construction, the nailing channels provide a method for installing panels, slabs, sheets and other kinds of covering over steel or concrete. Installation diagrams, construction details and specifications are included. 8 pp., illus. The Sanymetal Products Co. 1701 Urbana Rd., Cleveland 12, Ohio.*

Moving Stairways

Escalators. Tells the story of the Escalator — where it is being used and how it works. Two types are pictured and diagrammed along with basic data on dimensions and design loads. Special safety features are outlined. Otis Elevator Co., 260 11th Ave., New York 1, N. Y.*

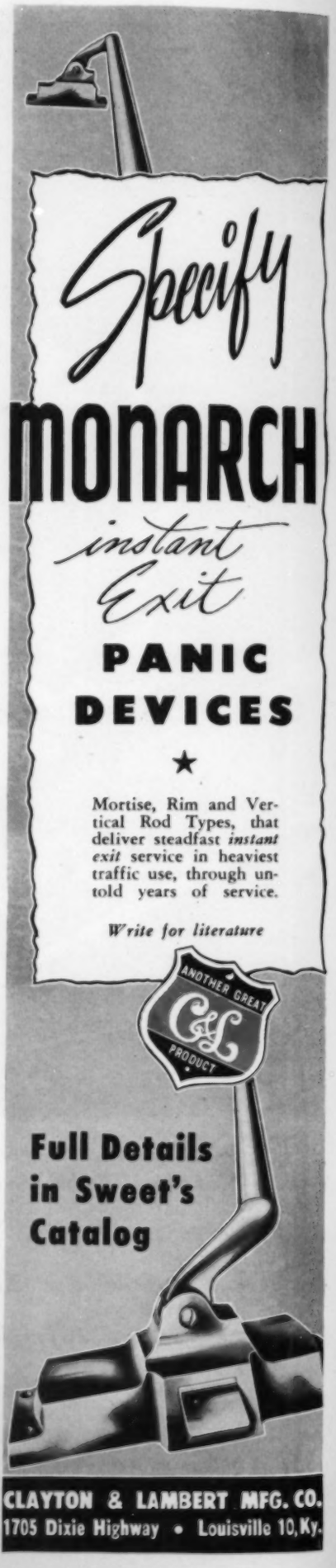
Cold Storage Doors

Jamison Bulletin No. 175. Information to aid the architect in selecting the proper type of cold storage door for various refrigerating requirements. It is divided into three sections: (1) doors for moderately low temperatures, (2) for zero and sub-zero use, and (3) for special cold storage uses. Photos and diagrams show construction details. Specifications are given on standard models for inside frame door dimensions and size of wall opening required. 12 pp., illus. Jamison Cold Storage Door Co., Hagerstown, Md.

Water Cooling Equipment

Binks Water Cooling Equipment and Industrial Spray Nozzles. Vertical and horizontal cooling towers of all sizes and cooling capacities are described as well as a complete line of spray nozzles. A section is provided on induced draft cooling towers with masonry walls designed to blend in with the general architectural scheme. Another section takes up atomizing nozzles for mainte-

(*Continued on page 204*)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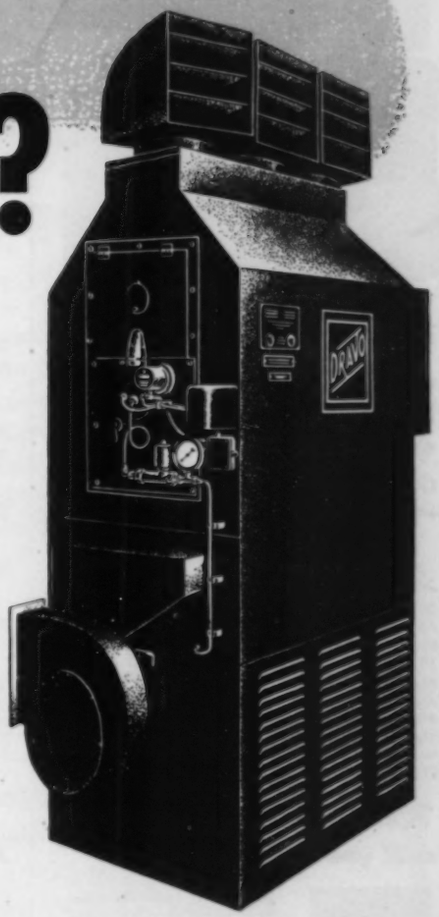

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ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(Continued from page 202)

nance of constant relative humidity in food processing plants, greenhouses, etc. Binks Mfg. Co., c/o Mr. J. E. Rowe, 3122 Carroll Ave., Chicago 12, Ill.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Ricardo Arosemena, Student, 23 Bryant Street, N. E., Washington 2, D. C.

Frank Carroll, Student, Box 171, Metamora, Illinois.

George E. Clayton, Student, 609 Marshall St., Lincoln 8, Nebraska.

Contemporary Home Builders, 1646 Sedgwick St., Chicago 14, Ill.

James M. Couch, Jr., Student, Box 2985, Va. Tech. Station, Blacksburg, Virginia.

Alex Danin, Architect, 1837 Victory Blvd., Staten Island, N. Y.

Howard F. Fetters, Consulting Engineer, 313 S. State St., Ann Arbor, Mich.

William J. Gleason, Structural Engineer, 433 Norwood Ave., Youngstown 4, Ohio.

Shlom Gromet, 29 Herzl Street, Haifa, Palestine.

Daniel R. Kasten, Box 4255, Va. Tech. Station, Blacksburg, Va.

Walter B. Kluz, Registered Architect, 311 Wilson Avenue, Ambridge, Pa.

Lindsay and Maples, Architects, 623 W. Hill Ave., Knoxville, Tenn.

Eugene A. Meyer, Architect, 316 Sherman, Evanston, Illinois.

Joseph Miller, Architect, 1112 Thirteenth St., N. W., Washington 5, D. C.

Fernand T. Picou, Citizens Bank & Trust Building, Thibodaux, La.

Bill Sauer, 65 Thirteenth Avenue, Columbus, Ohio.

Philip M. Scot, Student, 658 University Dr., Saskatoon, Sask., Canada.

W. H. Schumacher, A.I.A. and Associates, Petroleum Building, Oklahoma City 2, Oklahoma.

Fay R. Spangler, Architect, Anglo Bank Bldg., Fresno, Calif.

Matthew E. Trudelle, Architect, Arizona Title Bldg., 128 N. First Ave., Phoenix, Ariz.

C. Van De Weghe, 266 Ramsell St., San Francisco 25, Calif.

Wesley V. Wallace, Designer, 9200 W. Colfax, Lakewood, Colorado.

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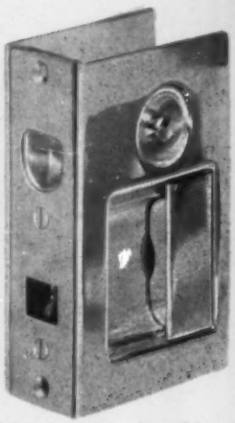

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